SIEMENS

DIGISCAN M

SP

System Manual

Software

Acquisition workstation

Register 5
Print No.: SPB7-420.816.01.04.02
Replaces: SPB7-420.816.01.02.02

English
Doc. Gen. Date: 02.03
66 47 452

Chapter	Page	Revision
All	All	03

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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Important notes

The acquisition workstation software comprises the ASCRx software and Windows® 2000 software. The ASCRx software is based on *syngo*® (x is product version).

➪ *syngo* is a registered trademark of Siemens AG.

The screen displays in this document are used for illustration and orientation. For this reason, there can be some differences in the actual illustration.

Safety information

When carrying out the work steps and test, the product-specific safety information contained in this document, as well as the general safety information must be observed.

All texts marked with ⚠ call attention to potential risks for health or life.

Documents required

- DIGISCAN M Planning Guide, SPB7-420.891.01... with completed configuration table with all data for network configuration
- Remote Services Planning Guide, TDIT-000.891.01...
- Data sheet of released hardcopy camera

CD-ROMs required

- Windows® 2000 software CD-ROM.
- ASCRx software CD-ROM.

Abbreviations

AE Title	Application Entity Title
AWS	Acquisition Workstation
CR	Computed Radiography IOD, e.g. used by the DIGISCAN M
DICOM	Digital Imaging and Communication in Medicine
DHCP	Dynamic Host Configurations Protocol
DNS	Domain Name System
HC	Hardcopy Camera
HIS/RIS	Hospital/Radiology Information System
ID	Identification
JPEG	Joint Photographic Experts Group
PPP	Point to Point Protocol
Q/R	Query/Retrieve
RAS	Remote Access Service
SCP	Service Class Provider
SCU	Service Class User
TCP/IP	Transmission Control Protocol/Internet Protocol
UI	User Interface
WINS	Windows Internet Name Service

Definitions

AE Title (AET)	DICOM Application Entity Title. Must be unique in a DICOM network.
Conformance statement	Each manufacture of a DICOM device has to provide such a statement which gives a overview of the product's DICOM capability.
DHCP	Dynamic Host Configuration Protocol. Reduces the complexity of configuring computers for TCP/IP networks. The following TCP/IP configuration can be dynamically assigned by a DHCP server: IP Address, Subnet masks, gateway and additional parameters like domain name.
DNS	The Domain Name Service is used to resolve the TCP/IP address from a "user friendly host name".
Dongle	Device plugged into the parallel port of the computer and provides a unique ID for licence handling. A security or copy protection device for commercial microcomputer programs consisting of a serialized EPROM and some drivers in a D-25 connector shell, which must be connected to an I/O port of the computer while the program is run. Programs that use a dongle query the port at startup and at programmed intervals thereafter, and terminate if it does not respond with the dongle's programmed validation code.
Hub	Distributor in a network using the star topology. A hub allows data transfer between computers.
IP address	32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of four classes (A, B, C, D) and is written as 4 octets separated with periods (dotted decimal format). Each address consists of a network number, an optional sub network number and a host number. The network and the subnet numbers together are used for routing, while the host number is used to address an individual host within the network or the sub network. A subnet mask is used to extract network and sub network information from the IP address. The IP is part of the socket address.
Port	Part of the socket address. Different DICOM services on the same host PC may use different port numbers.
Subnet mask	The subnet mask is used to extract network and sub network information from the IP address.
RAS	A service that allows remote clients running Microsoft Windows or Windows NT to dial in to a network.
Router	A device that connects different networks. Different means either a different architecture or a different type of protocol. In a TCP/IP environment a router is used to connect computers that are located in different IP address ranges
Service key	Necessary to enter the service UI. The key has to be generated prior the first software installation.
Socket address	The socket address is formed from the IP and the port number.
Vendor ID	Unique identification number provided by a dongle.
WINS	WINS provides a distributed database for registration and querying dynamic Net-BIOS names to IP addresses.

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Requirements

System requirements

The system requirements are described in the document DIGISCAN M Planning Guide, SPB7-420.891.01... .

General requirements

NOTE

Service keys 1, 2 and 7 are supplied in the shipment on a paper. Service key 7 is required to configure the station.

The file “license.dat” is also required, this is supplied on a CD-ROM.

- The acquisition workstation must be connected and operational.
- The user must have administrator privileges on the local machine (only for non preinstalled acquisition workstation).
- The cables for the network are available but not yet connected.
- The dongle supplied in the shipment must be connected to the parallel port.
- All required data for configuration must be available. In other words, the configuration table from the DIGISCAN M Planning Guide must be appropriately completed.
- The acquisition workstation software package must be available.

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General remarks

NOTE

This is a complete installation of the acquisition workstation software, including ASCRx and Windows® 2000.
Perform this chapter ONLY if NO pre-installed ASCRx or DIFFERENT VERSION of ASCRx pre-installed at the factory is indicated.
Please check the label on the package box for the same software version as your software package.
If Windows® 2000 is pre-installed it has to be reinstalled together with ASCRx to get a complete system.
With correct pre-installed acquisition workstation, skip this chapter and continue with chapter 4.

NOTICE

THIS WILL ERASE YOUR HARD DISK COMPLETELY AND WILL INSTALL Windows® 2000 AND ASCRx!!!

BIOS settings

- Start up the acquisition workstation and press **F2** for BIOS SETUP during the boot routine.
- Check **System Time** and **System Date**. If needed, correct because if corrected after installation of ASCRx, the license manager will recognize a manipulation of the system date and will prevent operation of the whole system.
- Select **Save changes & Exit**.
- Confirm with **Yes**.

Installation from the CD-ROM

- If a MOD drive (option) is connected to the acquisition workstation, this shall be disconnected, i.e. unplug the MOD drive cable from the acquisition workstation.
- Temporarily disconnect the network connection during installation to avoid any conflicts in the network.
- Insert the Windows® 2000 software CD-ROM in the CD-RW drive (CD recorder).
- Restart the computer.

Please wait until a warning beep is sound and you have to press any key to perform a deletion of the system partition.

- In the **Selection Menu** move the highlight with the aid of the cursor keys to **Distribution type**. Make sure it is set to **Customer**.
- Move the highlight to **Machine name**.
- Press **Enter**.

An entry box for the computer name appears (UDB machine name).

- Enter the computer name “AWS”.

NOTE	**If another computer name is required (e.g. when the name “AWS” is in conflict with local network naming rules), contact the network administrator. The computer name cannot be changed later without a complete reinstallation of the computer.**

- Press **Enter**.
- Move the highlight to **Keep data on the harddrive(s)**. This setting retains the image database, e.g. after a new installation (reinstallation).
- Press **Enter** to switch over to **Clear data on: 2nd / 3rd harddrive**.
- Move the highlight to **Continue Installation** and confirm with **Enter**.
- Confirm the complete reformatting on the hard drive with **Enter** once again.

NOTE	**If a SIMOMED monitor is used it is important that VGA mode is enabled.**

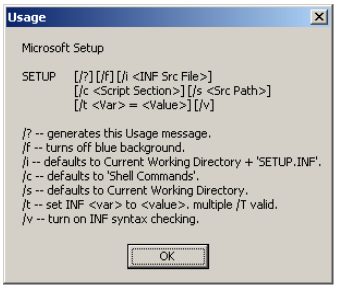
- **To enable VGA mode for SIMOMED monitor:**
  Use **F8** to stop boot and enter **advanced troubleshooting options**.
  Select: **Enable VGA mode**.
  Continue boot by pressing **Enter**.

The system will reboot several times until the basic Windows® 2000 installation has been completed.

During the procedure, the CD-ROM will be ejected and should be removed.

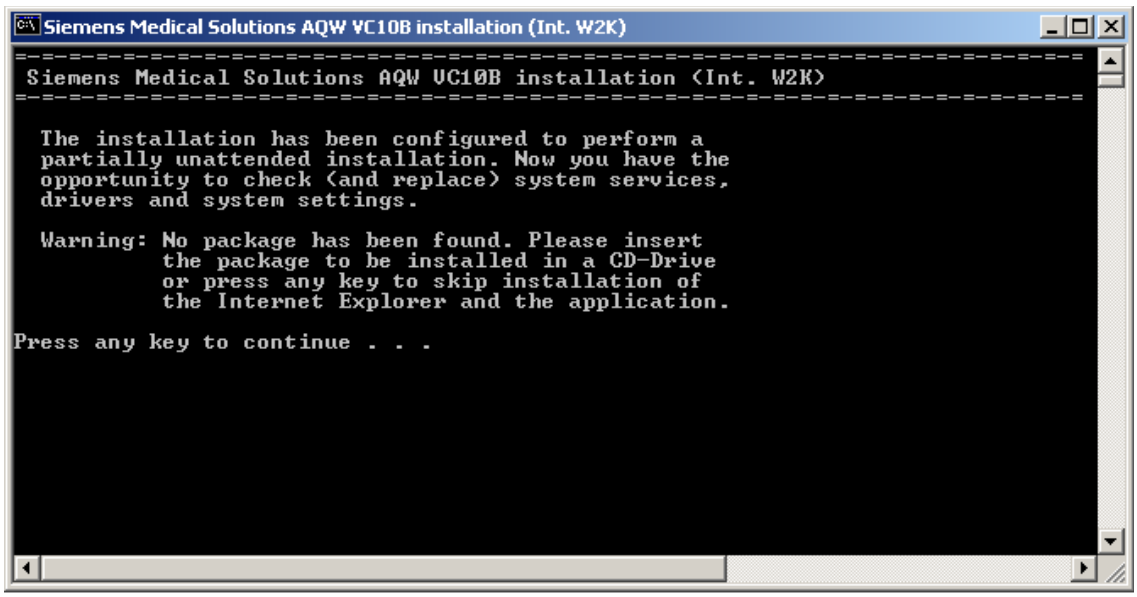
Waiting time approx.: 30 min.

- If the Usage window appears, press **OK**.



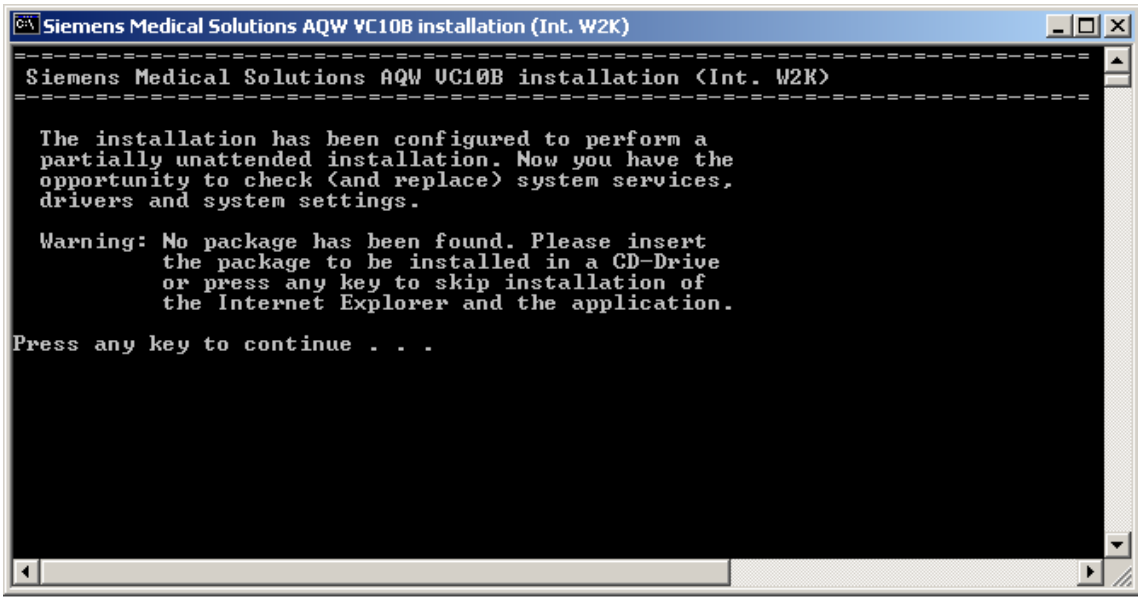
⚠CAUTION	**During the further installation procedure, the following DOS window appears. Under NO circumstances should any key be pressed or any window closed. Leave the window open or minimize it. The following settings must first be made.**

NOTE	**Any warnings that appear during the installation (e.g. "Cannot open: C:\ASCR\log\RunOncePerUser.log") should be closed.**



- Press **Start** to get the Windows® 2000 menu bar.
- Select **Settings > Network and Dial-up Connections**.
- Right-click **Network Connection #1,** select **Internet Protocol (TCP/IP)** and then **Properties**.
- Click on **Properties**.
- Do the network settings for connection to the image reader.
  IP: 192.168.1.1
  SUBNET mask: 255.255.255.0
- Confirm with **OK**.
- Right-click **Network Connection #2**, select **Internet Protocol (TCP/IP)** and then **Properties**.
- Click on **Properties**.
- Do the network settings for the Network (the data should be obtained from the site administrator or the Planning Guide Checklist).
- Close the Network and Dial-up Connections window.

- Insert the ASCRx software CD-ROM in the CD-RW drive.
- Return to the DOS window and activate this window.



- To do this, it may be necessary to click on a location in the window.
- Press any key to continue with the installation procedure.

This is followed by a number of auto installation and boot routines.

Waiting time: approx. 30 min.

- Remove the CD-ROM.
- The AWS software installation is now done. Continue by following the next step.
- Install the license key, from the license CD-ROM, in:
  C:\ASCR\config\Licensing
  and rename it “license.dat”.
- If the message “This folder already contains a file named ‘license.dat’...” appears, confirm replacement with **Yes**.

- **This step only for SIMOMED monitor:**

NOTICE

For correct display on the SIMOMED monitor it is necessary that the VIDEO BNC cable is correctly connected. The H signal is colored black and the V signal is colored white. The green cable is used for the video signal.

The monitor cable shall be connected to the right connector on the graphics adapter.
Boot Windows 2000.
Use **F8** to stop boot and enter **advanced troubleshooting options**.
Select: **Enable VGA mode**.
Continue boot.
Log in as administrator.
Insert the WINDRIVER CD and browse to find the win2k\MdXPCI directory.
Double click **setup.exe**.
During installation select: **One display** and **Yes** when the message “I want to restart my computer now” appears.

Log in as administrator.
Right click the desktop and select **Properties > Settings**.
Select **Advanced > Adapter > List all modes button**.
Select **1280 by 1024, 256 colors, 75 Hertz**.
Select **Apply** and then **OK**.

Right click the desktop and select **Properties > Settings > Advanced**.
Select the **DOME tab**.

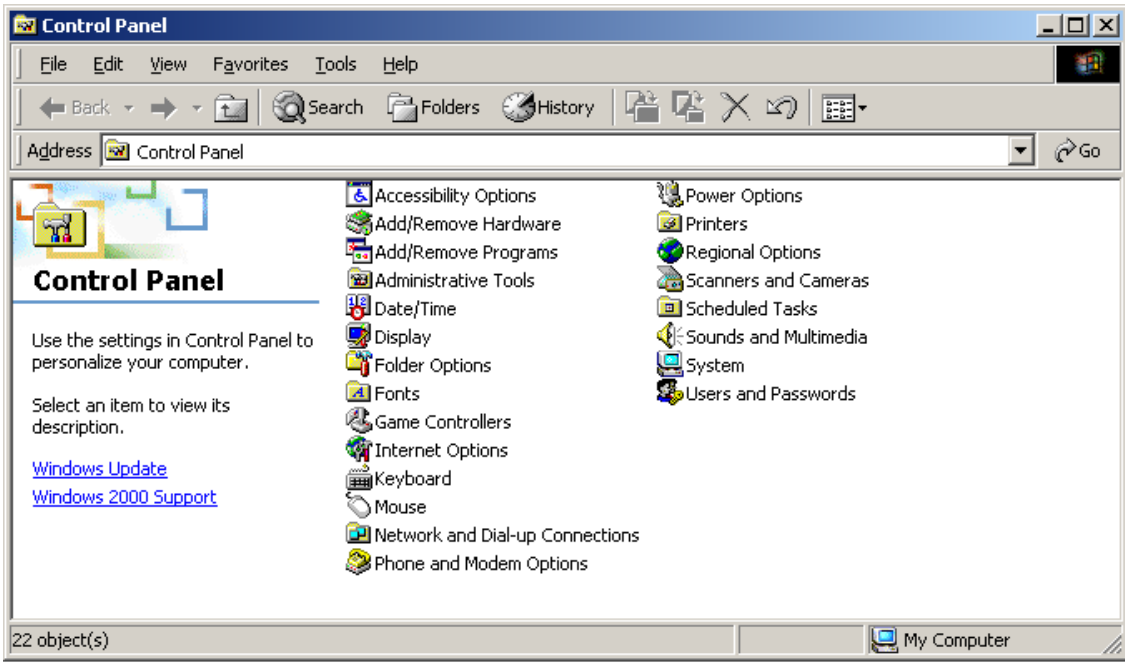
Set: Resolution 1280 x 1024 x 8
Refresh rate to 75Hz
Pedestal
Single channel grayscale
Dynamic gray palette

Click **Apply** and then **Close**.
Select **Yes** to restart the computer.

Manual settings

The following settings should be performed manually.

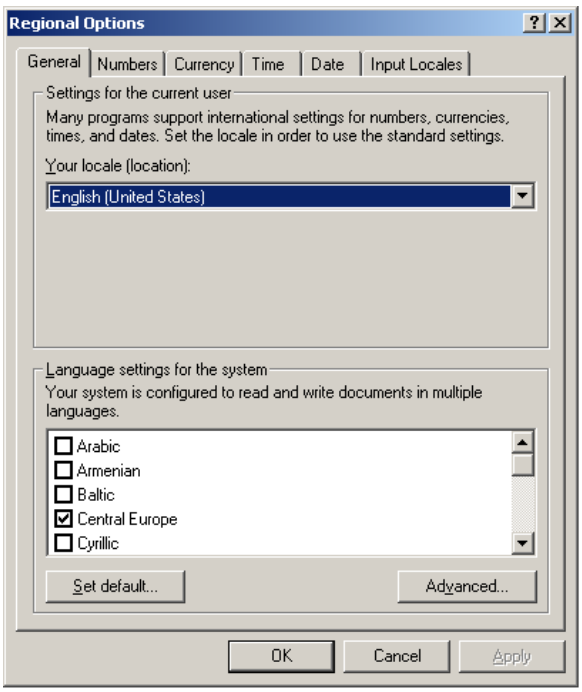
- Press **Start**.
- Select **Settings > Control Panel**.



Setting of the desired user interface language (not necessary for English)

NOTE	**The following instructions are for regional settings in Windows® 2000 only. For regional settings in Syngo, see Chapter Defining the regional settings, in the Syngo Operator Manual.**

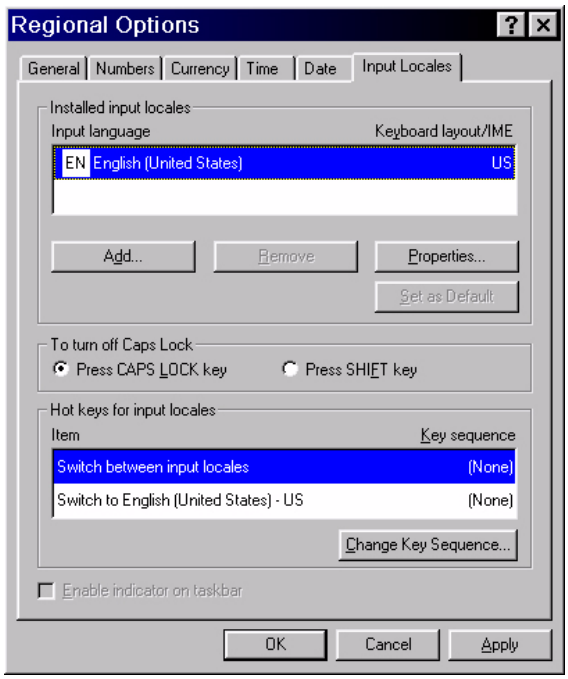
- Select **Regional Options** in the Control Panel.



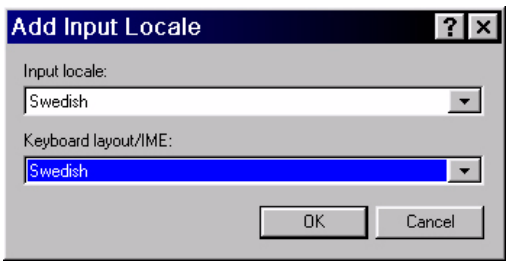
- Select the desired language here and confirm with **OK**.

Setting the country-specific keyboard layout (only for non US-keyboard)

- Select **Input Locales**.



- If wanted Input Locale is missing, press **Add**. Select Input locale and Keyboard layout/ IME and press **OK**.



- Double-click on one selection in **Input Locales**.
- Select the layout that corresponds to the keyboard that has been shipped in **Keyboard layout**.
- Click on **OK**.

- Select **Set as Default**.
- Click on **Apply**.
- Plug in the network cable.
- Plug in the MOD drive (option).
- Restart the acquisition workstation.

BIOS settings

During installation, the computer shall boot from the CD-RW (initial setting of the computer). After installation the computer shall boot from the hard disk.

Change BIOS settings:

- Restart the acquisition workstation.
- During the boot routine, press **F2** to get into the SCSI-BIOS.
- Select **Main > Boot options > Boot sequence**.
- Select "`Adaptec CDROM drive`" and press <space> to add "`!`" before "`Adaptec CDROM drive`".
- Select "`+Diskette`" and press <space> to add "`!`" before "`+Diskette`".
- Save settings.

Continue with "Syngo configuration" on Page 5 - 1.

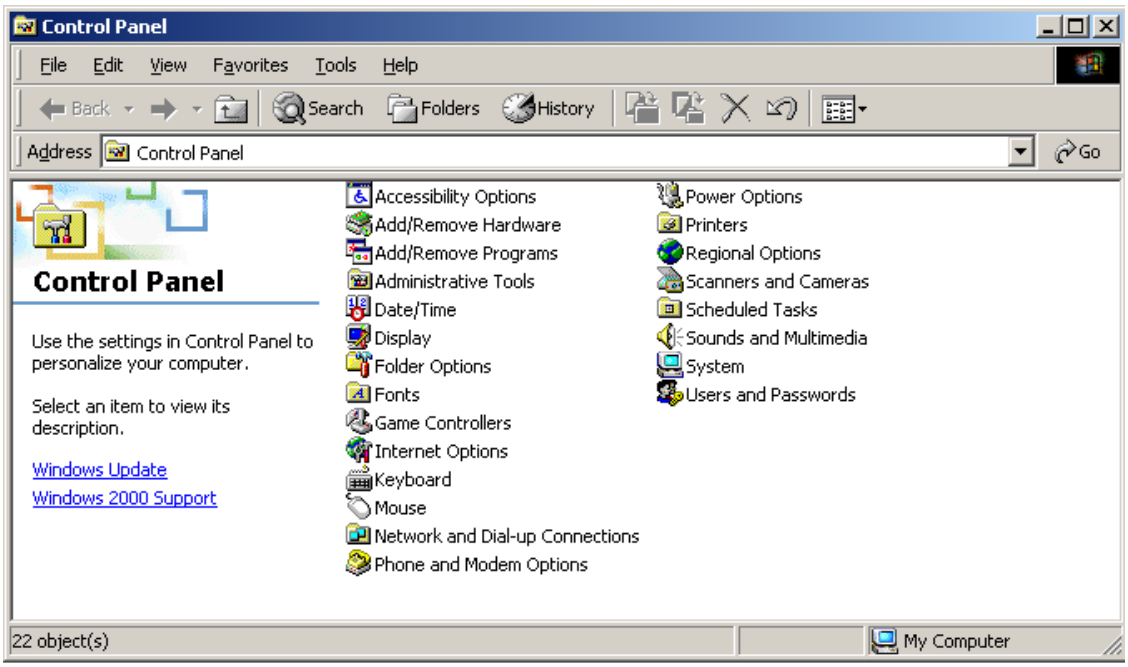
General remarks

NOTE

Perform this chapter ONLY if correct version of ASCRx is pre-installed at the factory. Please check the label on the package box for the same software version as your software package.
With correct pre-installed acquisition workstation continue with this Chapter 4. Otherwise ignore this chapter and start with Chapter 5.

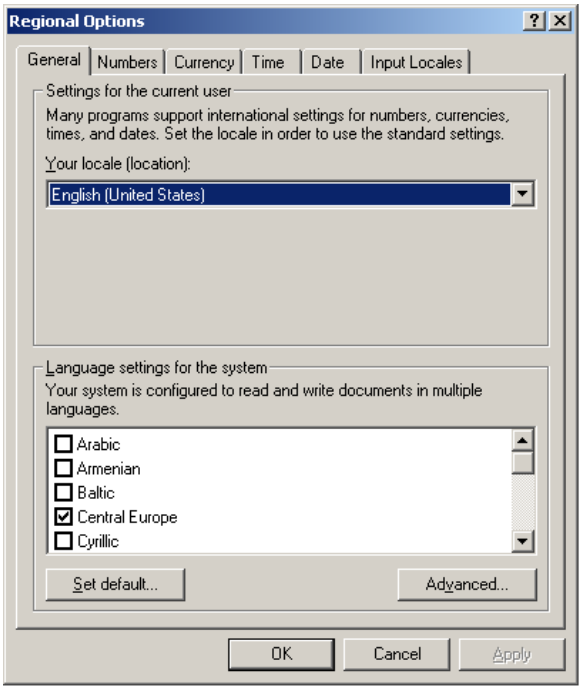
Manual settings

- Switch the acquisition workstation ON.
- Press **Start**.
- Select **Settings > Control Panel**.



Setting of the desired user interface language (not necessary for English)

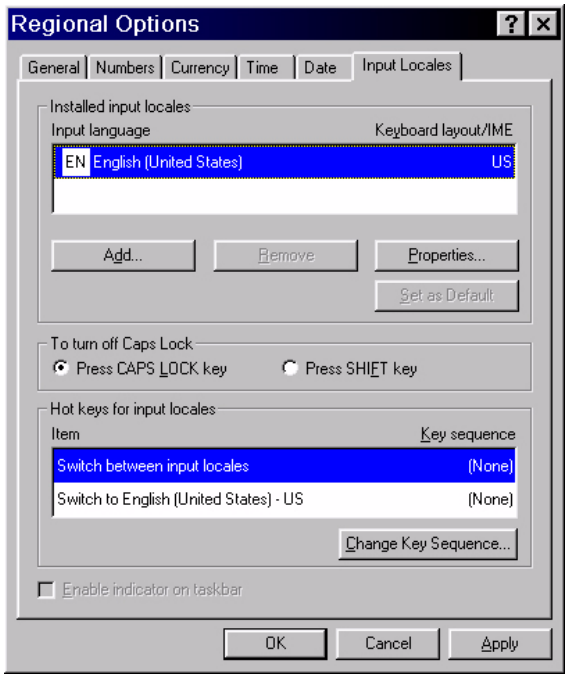
- Select **Regional Options** in the Control Panel.



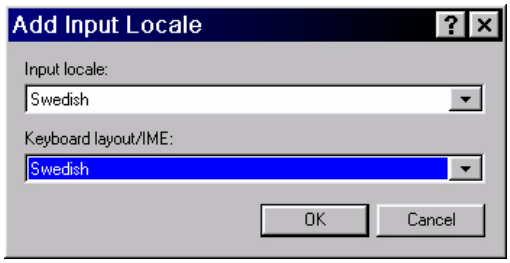
- Select the desired language here and confirm with **OK**.

Setting the country-specific keyboard layout (only for non US-keyboard)

- Select **Input Locales**.



- If wanted Input Locale is missing, press **Add**. Select Input locale and Keyboard layout/ IME and press **OK**.



- Double-click on one selection in **Input Locales**.
- Select the layout that corresponds to the keyboard that has been shipped in **Keyboard layout**.
- Click on **OK**.

- Select **Set as Default**.
- Click on **Apply**.
- Restart the acquisition workstation.

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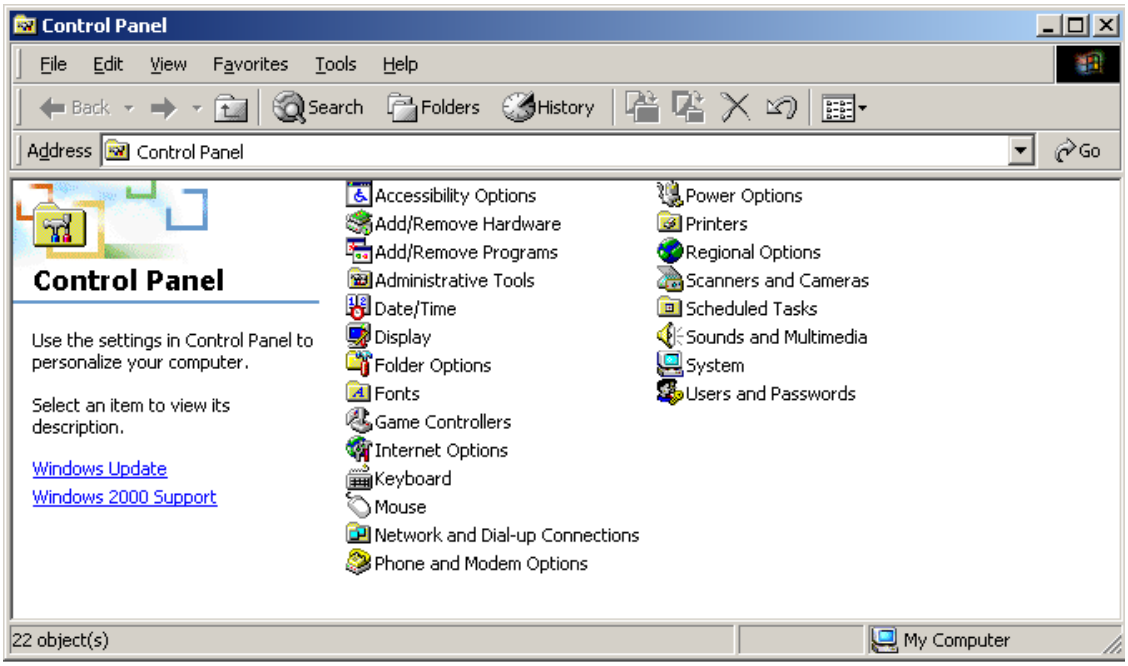
General remarks

NOTE	**To assure working effectively during startup, it is necessary to have the configuration table in the Planning Guide completed and available.**

Screen saver setting

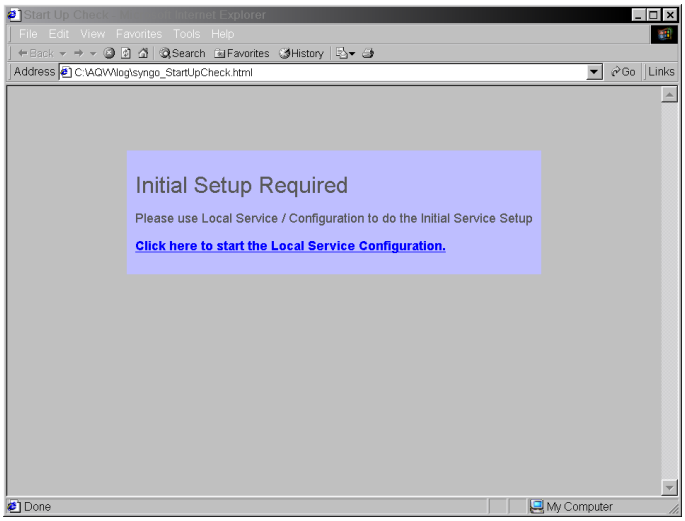
- Log in as meduser.
- Press **Start**.
- Select **Settings > Control Panel**.

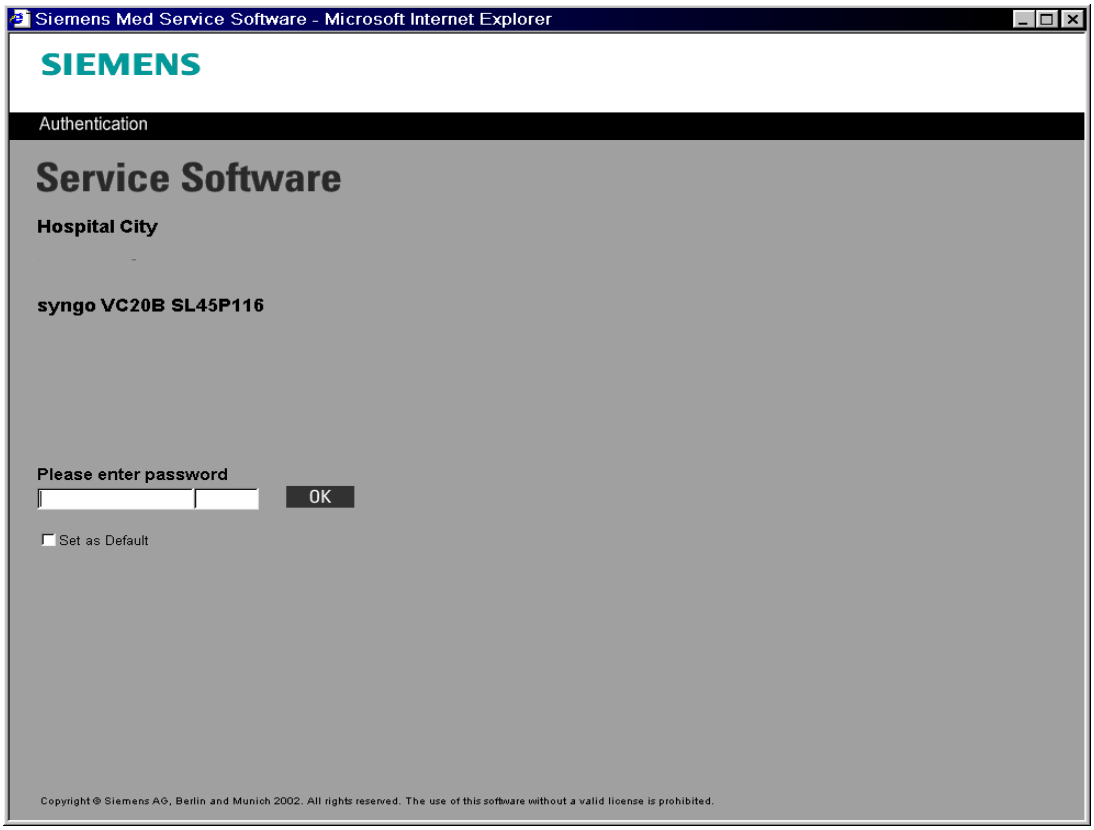


- Select **Display** in the Control Panel and select the **Screen Saver** tab.
- Select the screen saver **Marquee Display** and click on **Settings**.
- Type “DIGISCAN M” in the text field and confirm with **OK**.
- Click on **Apply** and confirm with **OK**.
- Close Control Panel.

Configuration

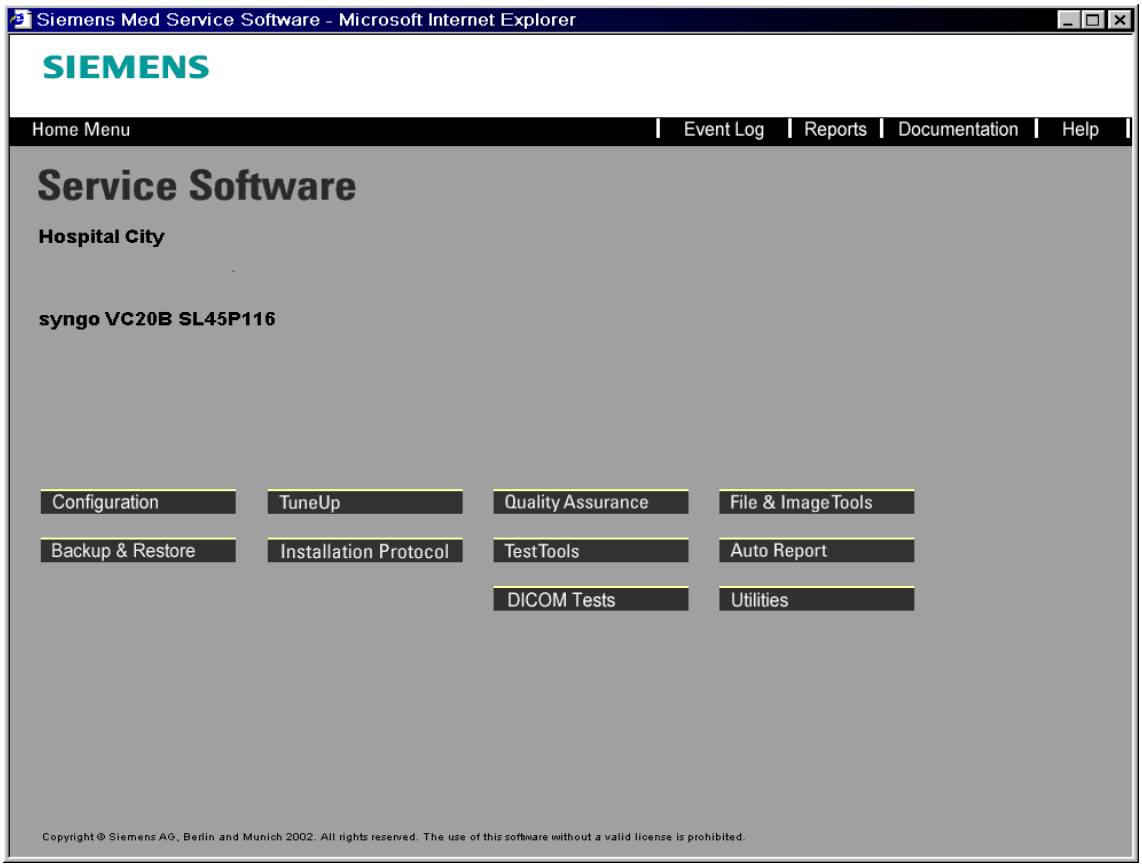
- Click to start the local service configuration.





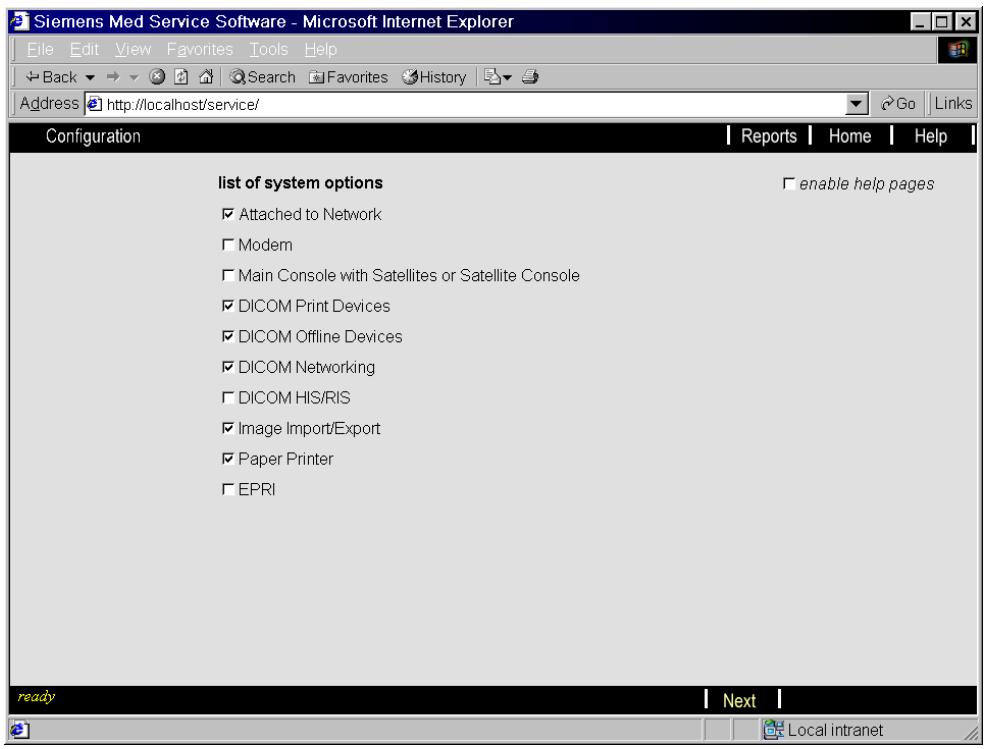
- Enter the first 14 characters of the service key in first mask.
- Enter the last 6 characters of the service key in second mask.
- Select **Set as Default**.
- Confirm the screen with **OK**.

The service home menu appears.



- Select **Configuration**.

The selection menu appears.



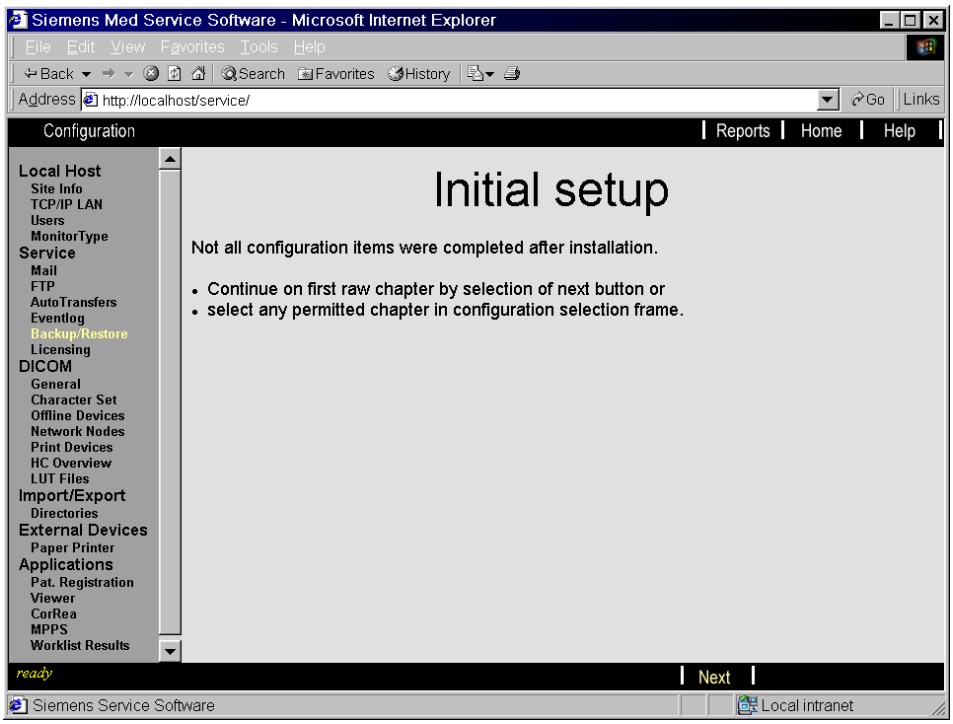
- In the **list of system options**, the check boxes corresponding to the following table must be selected accordingly.

Attached to Network	If available
Modem	**Not** used
Main Console with Satellites or Satellite Console	**Not** used
DICOM Print Devices	Select if a hardcopy camera is used in the network
DICOM Offline Devices	Always select
DICOM Networking	Always select
DICOM HIS/RIS	If available
Image Import/Export	Always select
Paper Printer	If available
EPRI	**Not** used

Depending on which items are selected, different points are listed on the left of the screen during configuration.

- In the action bar, select **Next**.

The following menu appears.



- In the action bar, select **Next**.

NOTE

During initial configuration, go through the screens in sequence by selecting > or Next in the action bar.

With later supplements, the configuration steps that already have entries can be skipped over. However, these program screens must also be checked or changed to reflect the on-site conditions. The sequence of configuration steps should take place according to the structure on the left side of the screens.

All data should be entered as described in the configuration table. In particular, upper and lower case conventions should be observed!

The help text is available before each configuration screen. Advancing to the next screen is possible by selecting the > symbol in the action bar.
Additional Online Help can be obtained by pressing the Help button in the navigation bar.

NOTICE

If the configuration is exited, this must ALWAYS be done by selecting the Finish button and then the Home button.

NOTE

Due to a known problem in the Syngo software an error message (Fig. 1) will appear when the Home button is clicked. This error message is located behind the Configuration window and must be closed before the Service Home Menu will appear. To solve this problem move the Configuration window, locate the error message window and click the OK button to close it. The same message will appear a second time. Click OK again to close it. To return to the Home Menu window click on the Home button in the Configuration window.

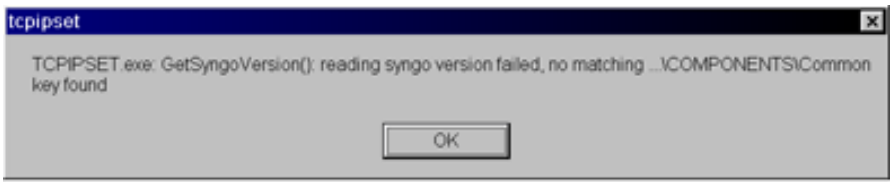


Fig. 1 Error message window

NOTE

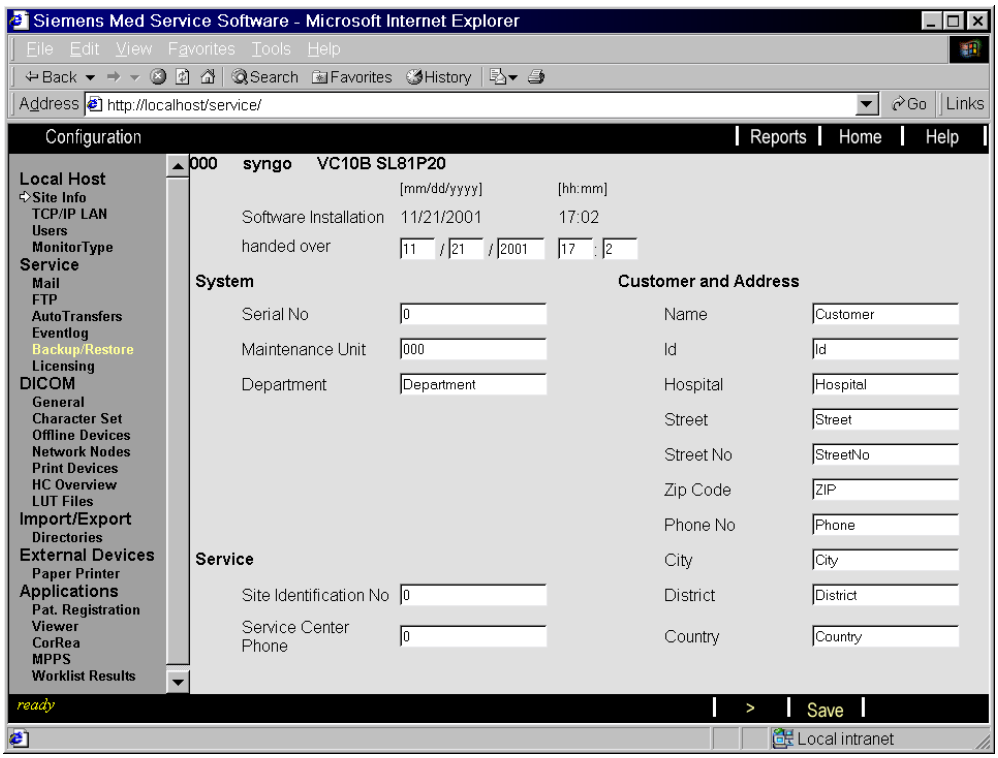
With a pre-installed acquisition workstation some of the following screens are already filled in with data. The automatic, chronological configuration routine does not work in this case as it does with an initial configuration. In such a case, all following screens must therefore be selected manually.

Local Host

Site Info

The **Site Info** platform allows you to enter some general system and site-specific information for easy identification of your machine.

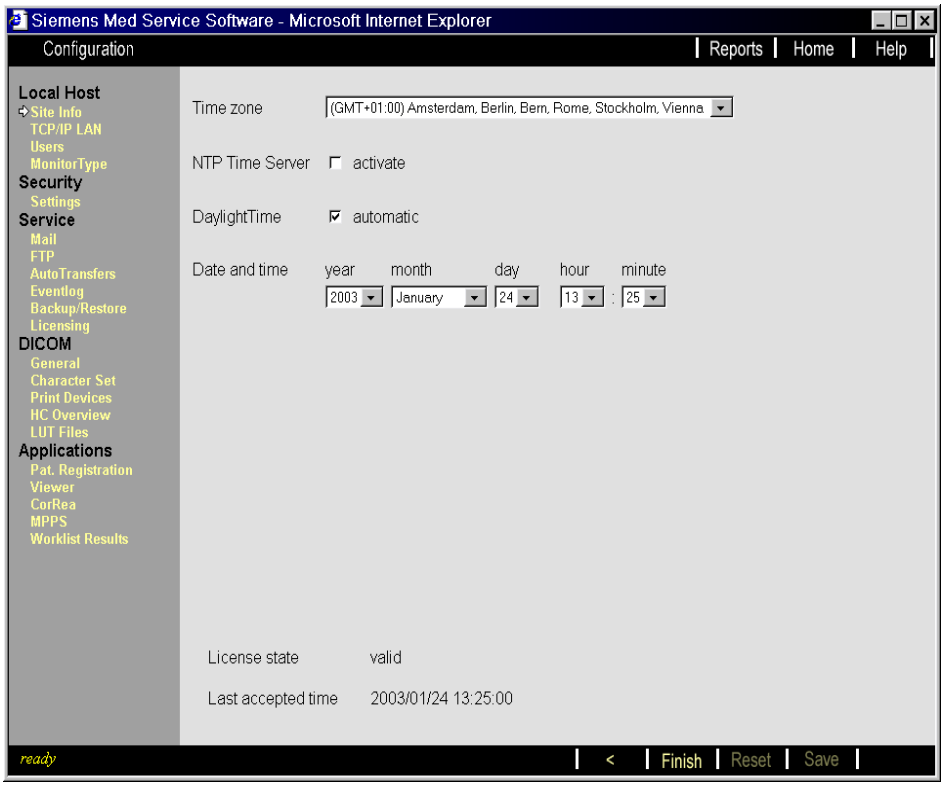
The next screen appears by clicking on **>** in the action bar.



- Fill in the boxes accordingly.
  - **Handed over:** time at which hand over to the customer takes place.
  - **Serial No:** Serial number of the DIGISCAN M system. This can be found on the system label mounted on the back of the acquisition workstation. If the serial No. starts with a “0”, this “0” should be left out.
    (This entry indicates the acquisition workstation and is important for the function).
  - **Maintenance Unit:** mg
    (to indicate this acquisition workstation as DIGISCAN M, this entry is important for the function).
  - **Department:** department.
  - **Site Identification No:** Identification number of the system as the system is listed in the Siemens business office.
  - **Service Center Phone:** Telephone number of the Service Support Center.
  - **Name:** name of the customer.
  - **Id:** enter the customer number.
  - **Hospital:** name of the clinic/hospital.
  - **Street:** street on which the clinic/hospital is located.
  - **Street No:** address.
  - **Zip Code:** postal code.
  - **Phone No:** telephone number of the clinic/hospital.
  - **City:** name of the city/town.

- **District:** name of the district in which the clinic/hospital is located, corresponding to the structure in the country organization.
- **Country:** country.

- Select **Save** in the action bar to save the values that have been entered.
- Acknowledge the message "... successfully saved" with **OK**.
- The next screen appears by clicking on **>** in the action bar.



- Update the time and date here as needed.
- Select **Save** in the action bar to save the values that were entered.
- Confirm that the time settings are OK.
- Acknowledge the message "..... successfully saved" with **OK**.
- Select **Next** in the action bar.

NOTICE

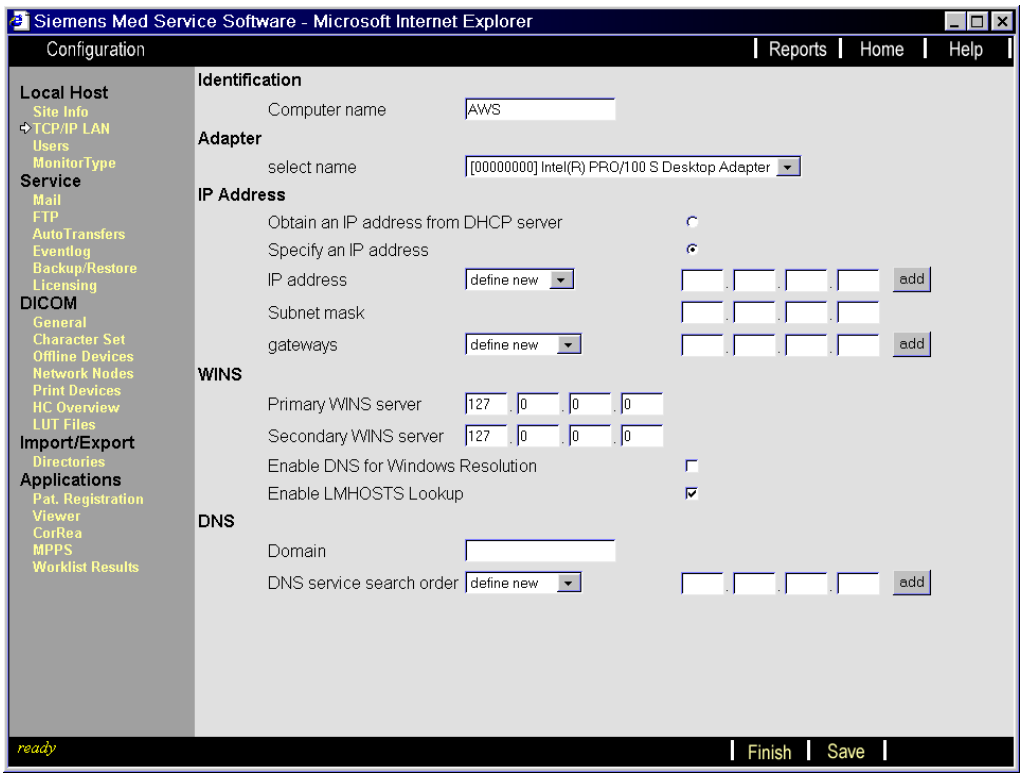
The following work steps describe integration of the acquisition workstation into an existing network.

After finishing the complete configuration, it is necessary to configure workstations at the corresponding modalities (viewing station etc.).
The required steps are described in the instructions for the particular modalities.
To simplify this process, fill out the accompanying data sheet at the end of these instructions and send it as a copy(-ies) to the affected modalities. This page contains all relevant data to configure the acquisition workstation at these modalities.

TCP/IP LAN Settings

The **TCP/IP LAN** platform allows you to configure the local networking properties of your system. Skip this section if your system works completely as a stand-alone system, the default values provided will do in that case.

If selected, the installation procedure runs automatically to the point TCP/IP LAN. If there are later additions and changes, manually select the point in the selection menu on the left under **Local Host**.



(The Computer name box shows the entered UDB machine name.)

- Leave as it is.

NOTICE

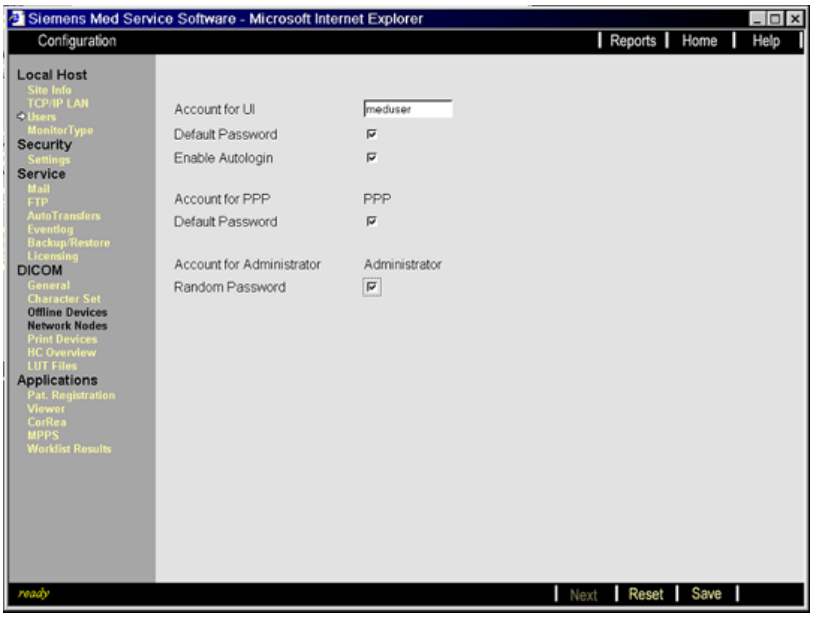
Adapter is selected automatically. Do not make any changes here!

- Select **Next** or **Finish** in the action bar.

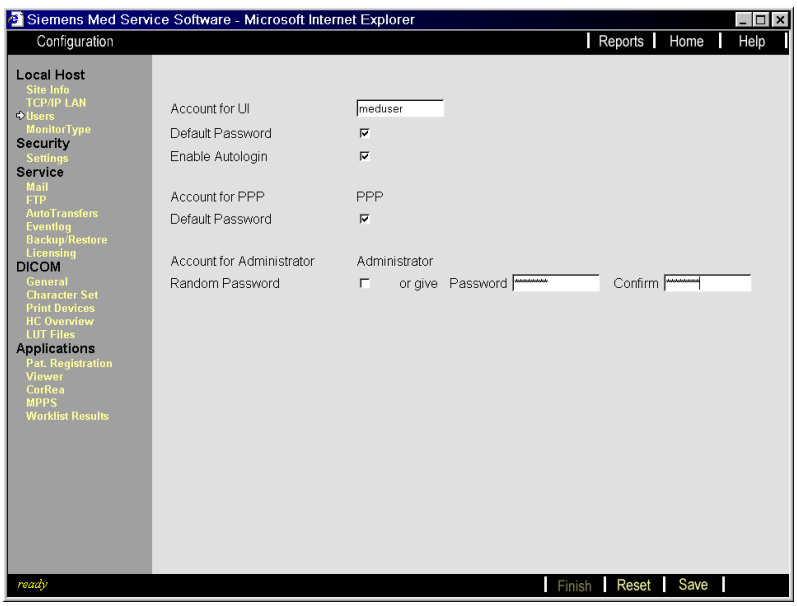
User settings

The installation procedure runs automatically to the point Users. If there are any later additions and changes, manually select the point in the selection menu on the left under **Local Host**.

Define the PPP password, which is used for remote login via RAS to your system. The password needs to be known at the RDIAG server.



- The log on procedure is specified in the top part of the screen. Here it is possible to specify whether the existing default password will be used by syngo®, whether the user will supply his own password or whether an automatic login will be used. The procedure should be discussed with the customer or with the responsible administrator (safety aspect).



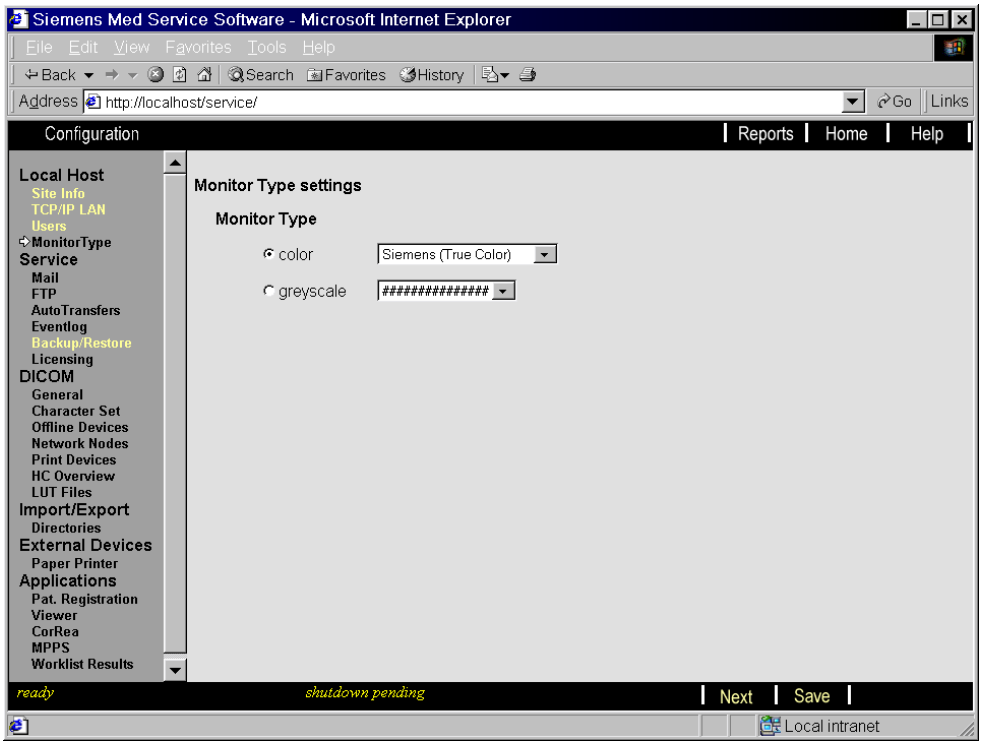
NOTE	**Accept the settings with as few changes as possible but a given password for administrator is preferred to the randomly generated!**

If **Default Password** is selected the system creates the password for the **Account for UI: meduser** automatically.
If Enable Autologin is selected the system starts at Autologin.
If Enable Autologin is NOT selected the default password is necessary for login.
In the bottom part of the screen, enter the password for **Account for PPP**.
This password must be the same as the password entered in the RDIAG server under **Batch Password from remote system**. (A good PPP password consists of at least 8 characters with at least one number, special characters (e.g. @ §$%, etc.) are not recognized by the RDIAG server and should be avoided.)

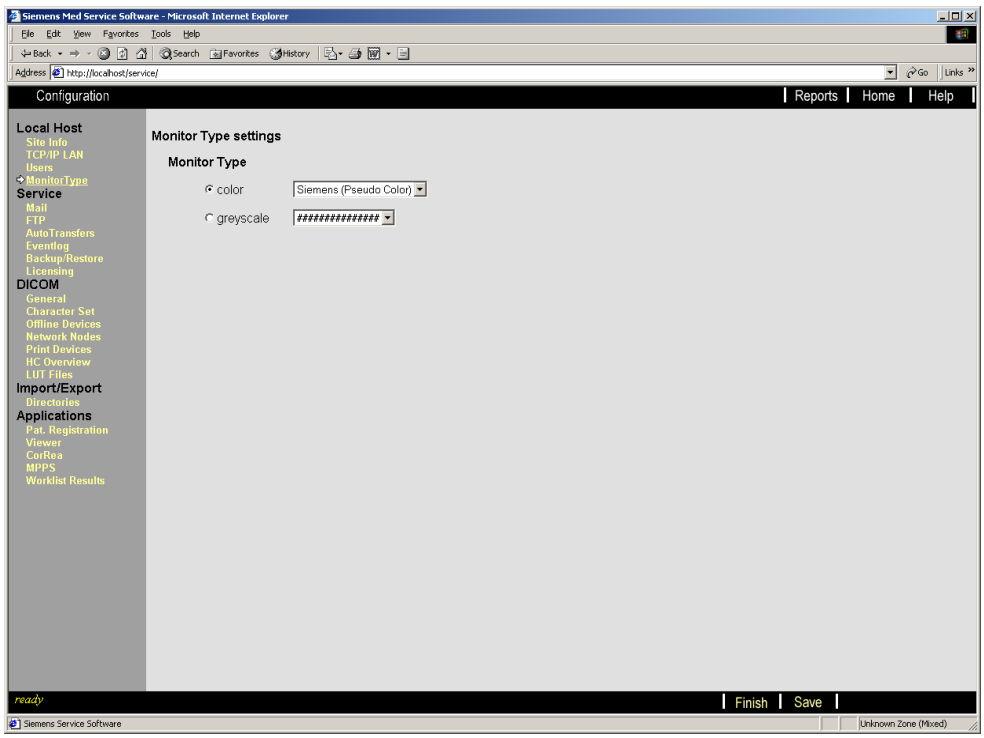
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Acknowledge the message ".... after reboot" with **OK**.
- Select **Next** in the action bar.

Monitor Type

The configuration procedure runs automatically to the point Monitor Type. If there are later additions and changes, manually select the point in the selection menu on the left under **Local Host**.



- If LCD monitor, make sure that **color** is **Siemens (True Color)**.
  If SIMOMED monitor, make sure that **color** is **Siemens Pseudocolor**.



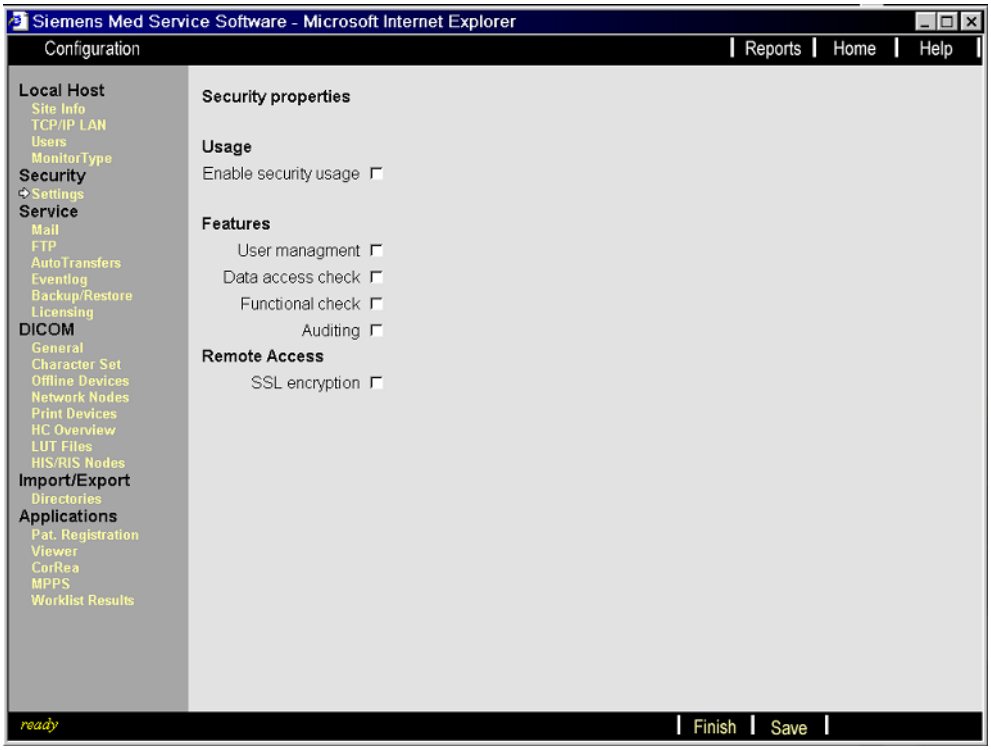
- Select **Save** in the action bar to save the values that were entered.

- Acknowledge the message “....successfully saved” or “...unchanged. Saving is not necessary!” with **OK**.
- Select **Next** in the action bar.

Security

NOTICE

Do not change any of the security settings! The changes will lead to a complete reinstallation of the system.

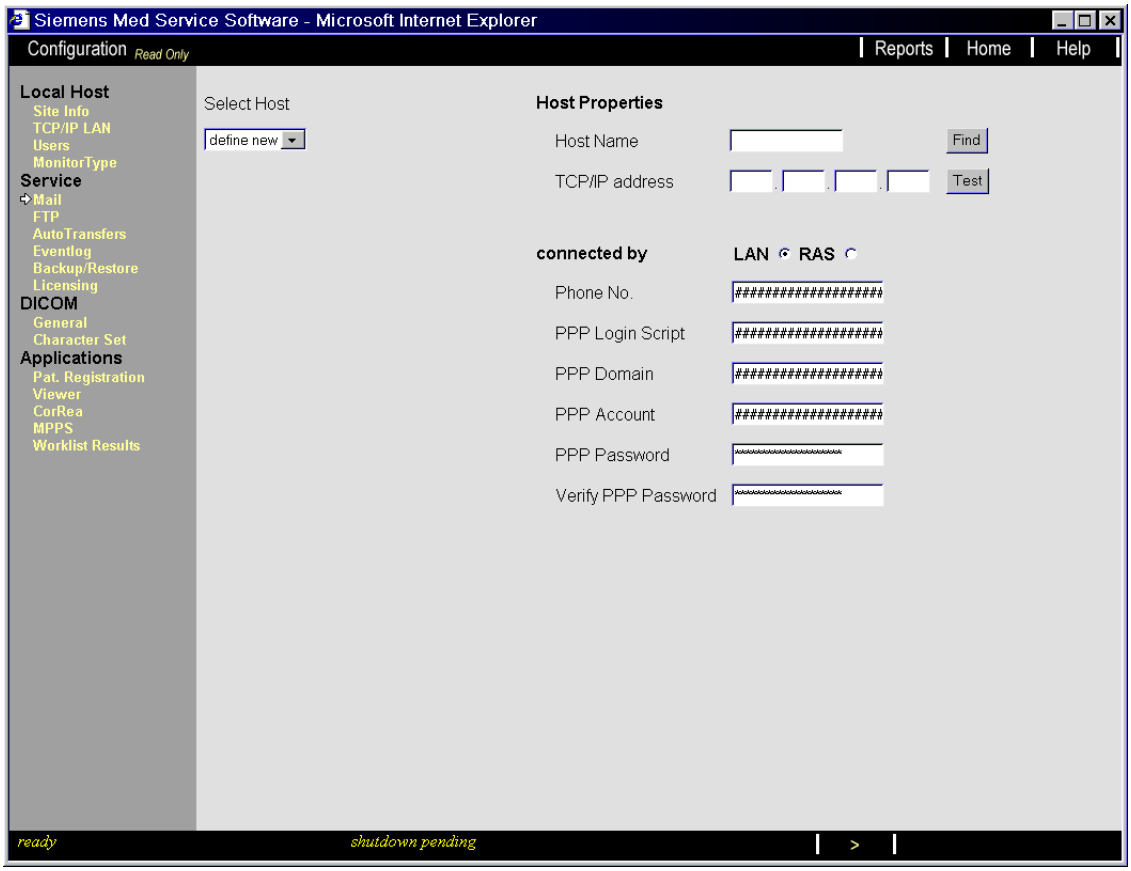


Service

Mail settings

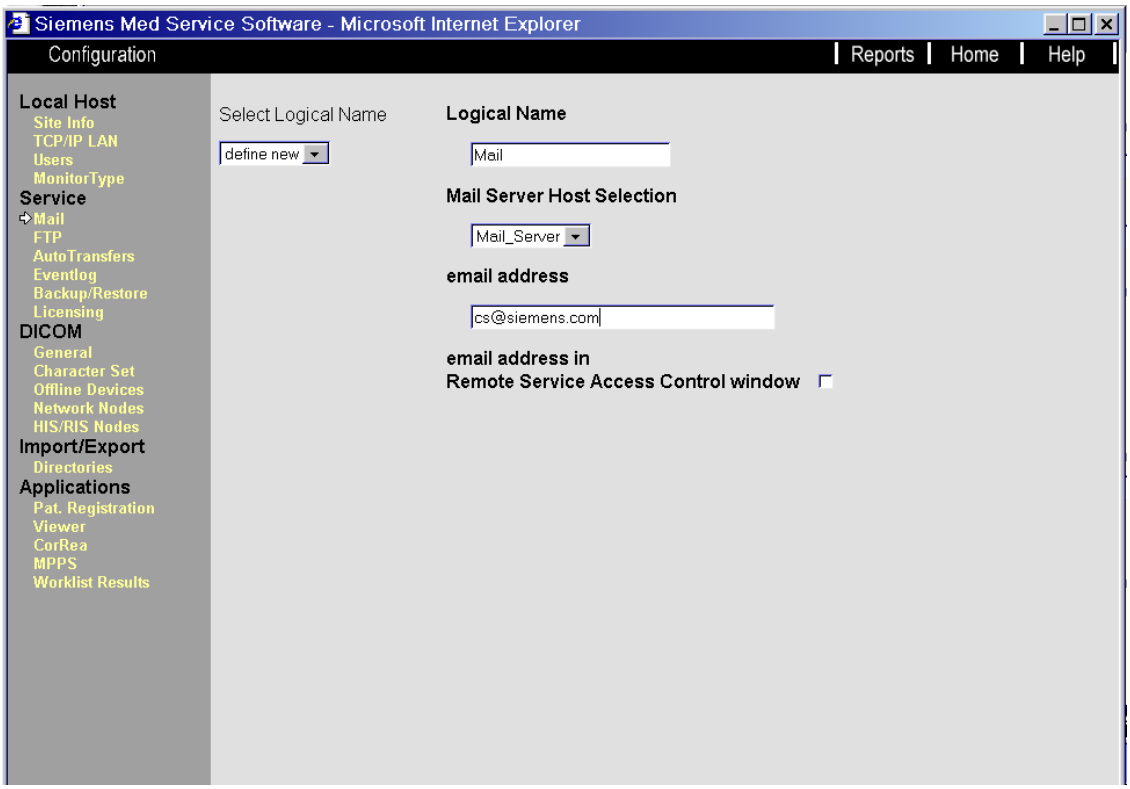
NOTE	**The mail settings are important for the auto report function. The needed data can be found in "Remote configuration" on Page 7 - 1.**

The configuration procedure runs automatically to the point Mail. If there are any later additions and changes, manually select the appropriate point in the selection menu, on the left under **Service**.



- In **Select Host**, select **define new** (with a new installation) or accept the entry (with components that are already configured).
- In **Host Name**, enter the name of the target computer.
  - If a name server is used, and the application exists in the network, it can be searched for by using **FIND**.
  The response should be: “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address will then be accepted.
  - Otherwise, enter the Host Name and the IP address (take the data from the configuration table).
- Select **TEST**. The TEST command corresponds to a PING command. The response should be: “Host with IP address xxx.xxx.xxx.xxx is alive”.
- Select **connected by LAN**.

- Accept the entry with **Save** in the action bar.
- Acknowledge the message "...successfully saved" with **OK**.
- The next screen appears by clicking on **>** in the action bar.

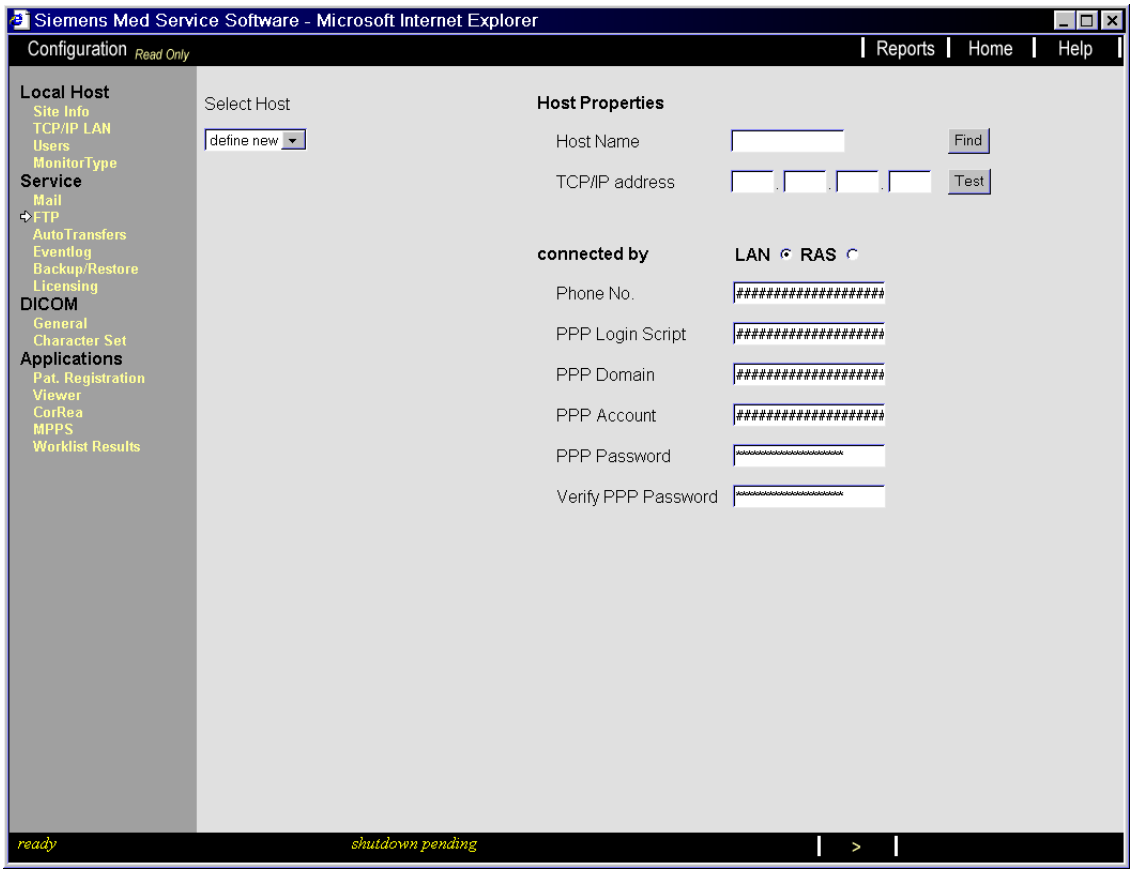


- In **Select Logical Name**, select **define new**.
- In **Logical Name**, enter a name.
- In **Mail Server Host Selection**, select the mail server.
- In **email address**, enter the email address.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "..... successfully saved" with **OK**.
- Select **Next** in the action bar.

FTP settings

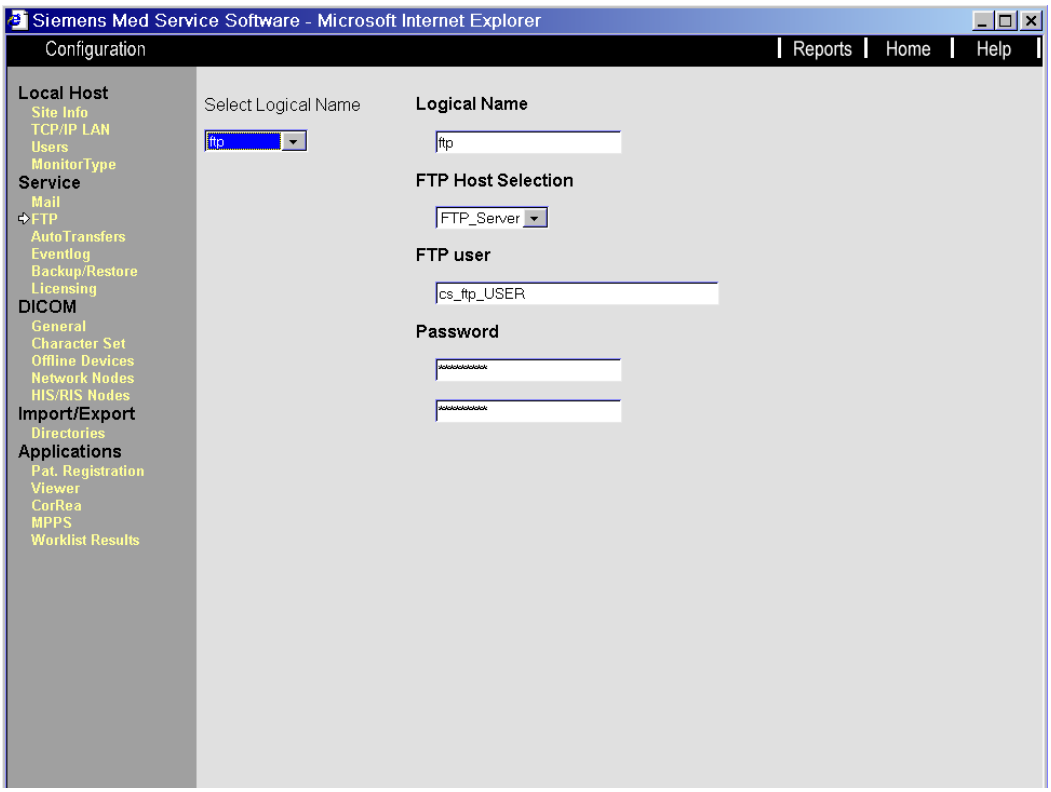
NOTE	**The FTP settings are important for the auto report function. The needed data can be found in chapter 7.**

The configuration procedure runs automatically to the point FTP. If there are later additions and changes, manually select the appropriate point in the selection menu on the left under **Service**.



- In **Select Host**, select **define new** (with a new installation) or accept the entry (with components that are already configured).
- In **Host Name**, enter the name of the target computer.
  - If a name server is used, and the application exists in the network, it can be searched for by using **FIND**.
  The response should be: “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address will then be accepted.
  - Otherwise, enter the Host Name and the IP address (take the data from the configuration table).
- Select **TEST**. The TEST command corresponds to a PING command. The response should be: “Host with IP address xxx.xxx.xxx.xxx is alive”.
- Select **connected by LAN**.
- Accept the entry with **Save** in the action bar.
- Acknowledge the message “...successfully saved” with **OK**.

- The next screen appears by clicking on **>** in the action bar.



- In **Select Logical Name**, select **define new**.
- In **Logical Name**, enter a name.
- In **FTP Host Selection**, select the FTP host.
- In **FTP user**, enter the user.
- In **Password**, enter a password.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message “..... successfully saved” with **OK**.
- Select **Next** in the action bar.

Auto Transfers

The configuration procedure runs automatically to the point Auto Transfers. If there are later additions and changes, manually select the appropriate point in the selection menu on the left under **Service**.

- Select **Activate automatic Transfers**.
- Select **Save** in the footer to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Select **Finish** in the action bar.

Eventlog settings

The configuration procedure runs automatically to the point Eventlog. If there are later additions and changes, manually select the appropriate point in the selection menu on the left under **Service**.

The Eventlog function allows customizing of the Event Log user interface of your Service Software. Specify whether:
only service-relevant messages should be logged
only service-relevant messages should be displayed in the Event Log window (with all errors being logged) and the sequence number should be displayed.

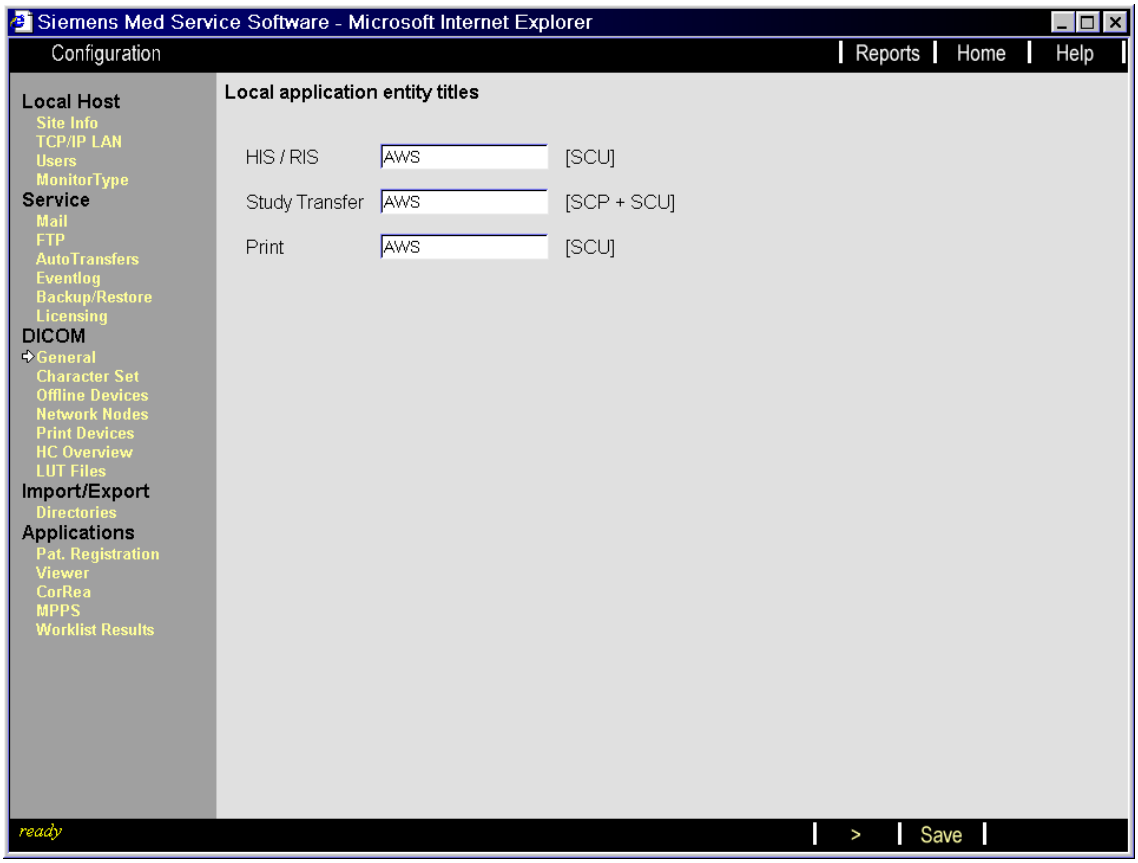
- If not otherwise specified, select all 3 check boxes.
- Select **Save** in the footer to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Select **Finish** in the action bar.

- Select **>** or **Next** in the action bar until the point DICOM General.

DICOM

General

The configuration procedure runs automatically up to the point General. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.



(The boxes, shows the entered UDB machine name.)

Take the data from the configuration table. The AET names must be unique in the network. They will be automatically set by changing the host name in the TCP/IP LAN settings dialog.

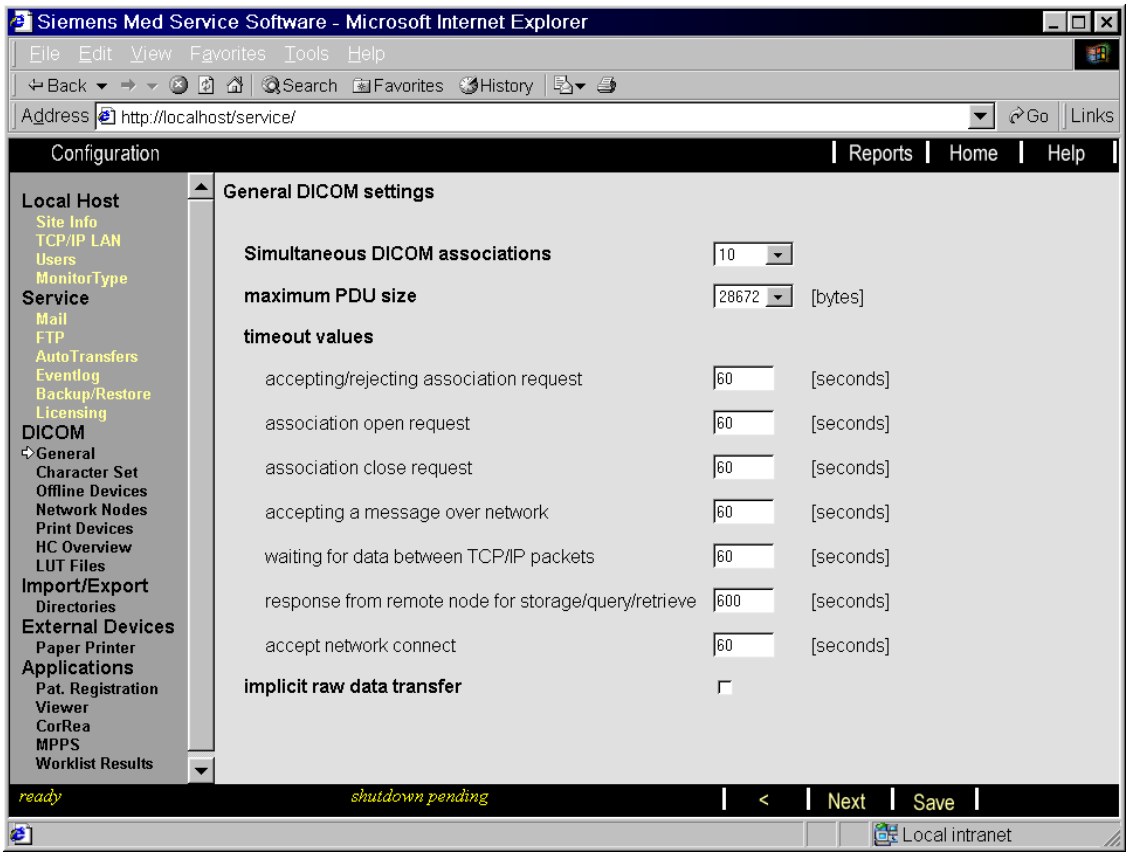
NOTE	**Keep Host name!**

NOTICE

The Print AET is required to distinguish between the different modalities sending images to the printer to select the proper LUT accordingly.

If the wrong AET is configured a default LUT might be selected in the printer, which has a big impact on the image quality!!!

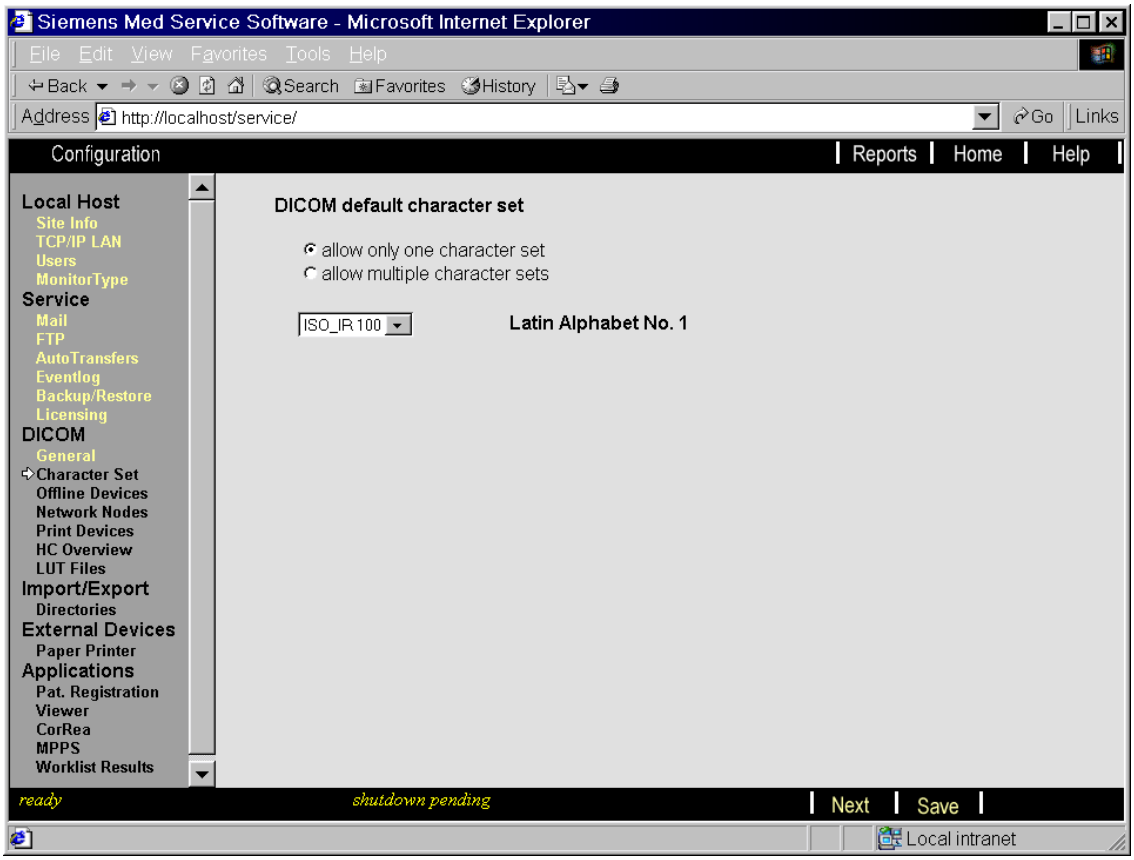
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- The next screen appears by clicking on **>** in the action bar.



- Select **Next** in the action bar.

Character settings

The configuration procedure runs automatically up to the point Character Set. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.



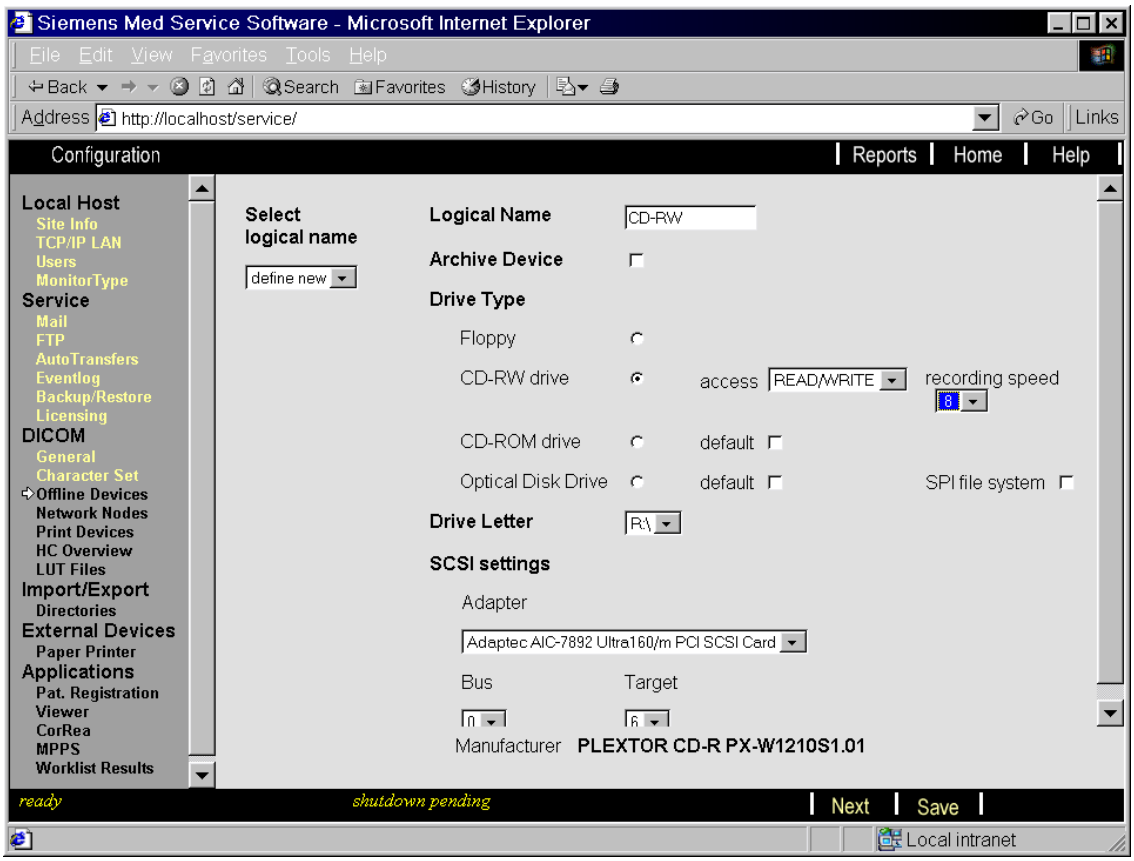
The settings need to be changed only if the keyboard allows this option.

ISO 2022 IR 6	ASCII
ISO2022 IR 100	Latin1 <recommended>
ISO2022 IR 13	Japan

- If changed, select **Save** in the action bar to save the values that have been entered and acknowledge the message "...successfully saved" with **OK**.
- Select **Next** in the action bar.

Offline Device settings

When selected, the configuration procedure runs automatically up to the point Offline Devices. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.



In this section, you define the setting of DICOM offline devices on the local host.

- Enter a logical name for the offline devices (e.g. CD-RW or MOD).
- If it is an archive device, select it.
- Select the drive type.

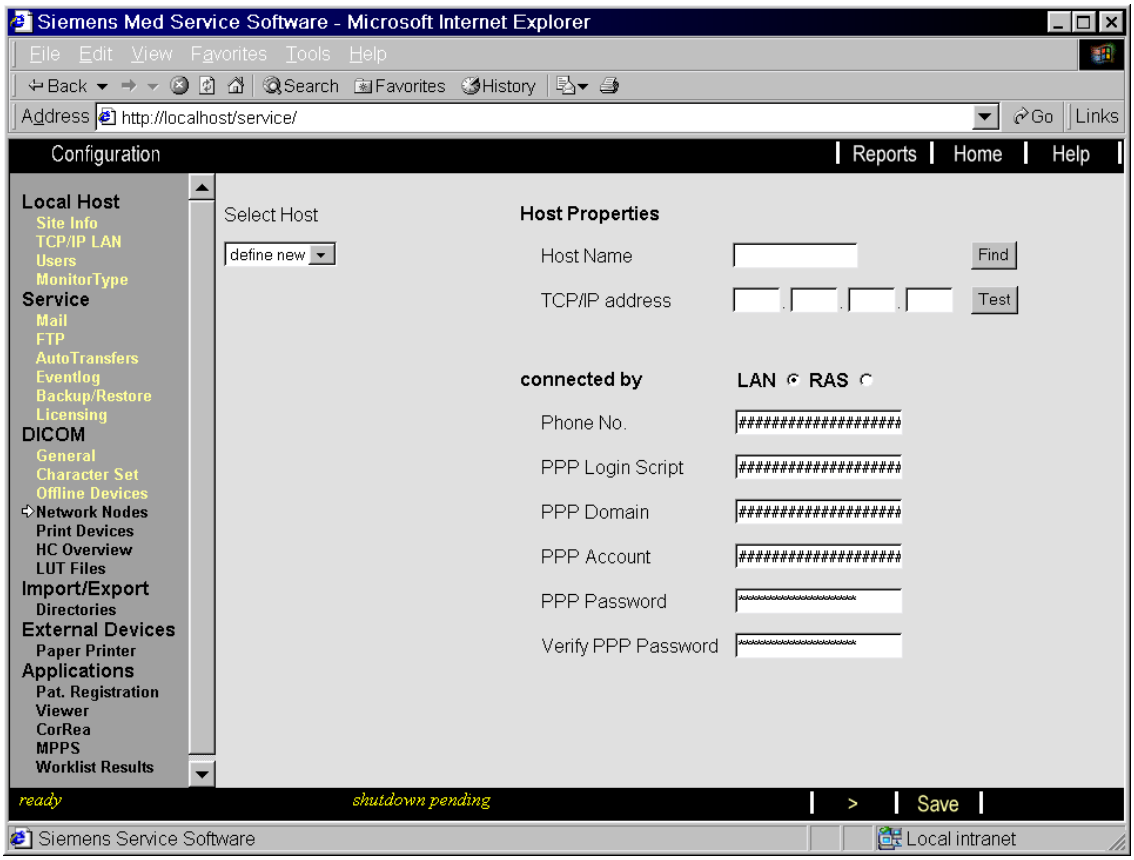
NOTE	**Do not select Floppy as archive devices.**

- Select a drive letter, if more than one device of the same type is available on the local host.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Repeat this procedure for all devices (CD-RW, MOD).
- Select **Next** in the action bar.

Network Node settings

When selected, the procedure runs automatically up to the point Network Nodes. If there are later additions and changes, manually select the point in the selection menu on the left under **DICOM**.

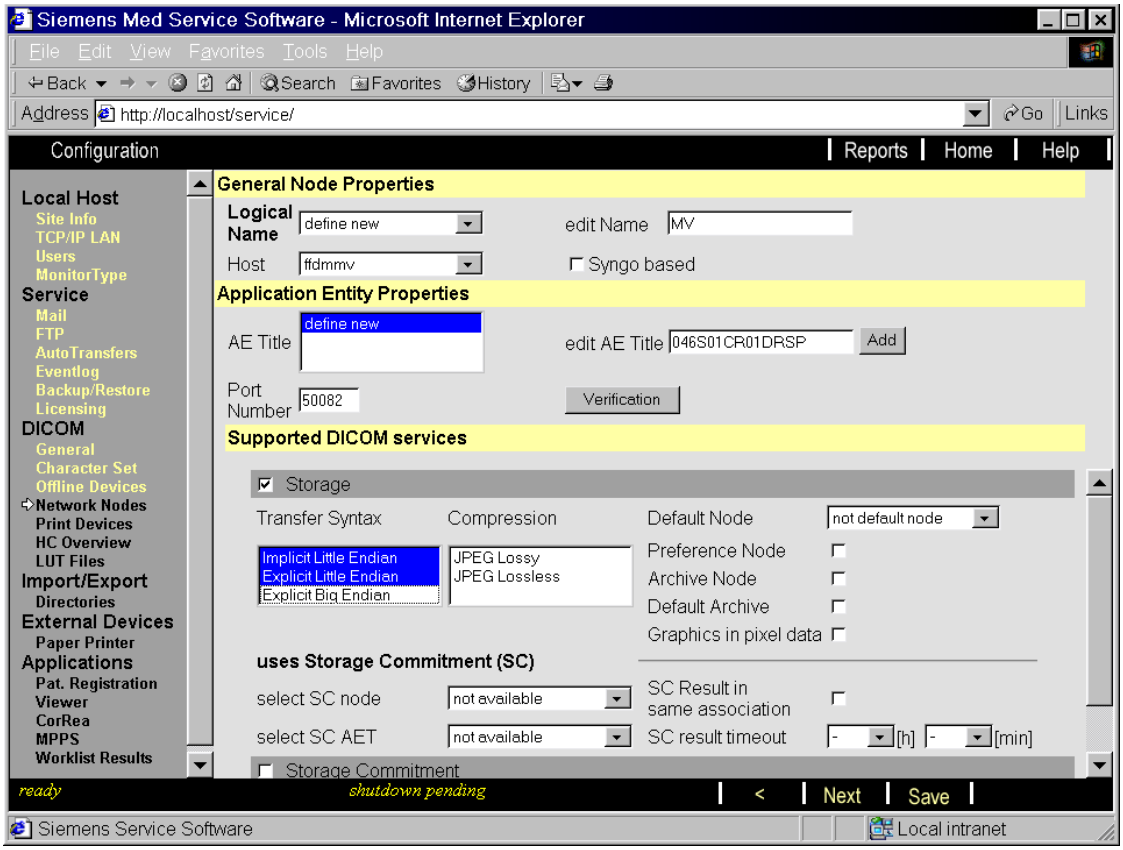
NOTE	**Network nodes are acquisition workstations, viewing stations and hospital archive systems.**



Definition of network nodes which are connected to the acquisition workstation.

- In **Select Host**, select **define new** (with a new installation) or accept the entry (with components that are already configured).
- In **Host Name**, enter the name of the 1st application (e.g. viewing station).
  - If a name server is used, and the 1st application is configured in the network, it can be searched for by using **FIND**.
  The response should be: “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address will then be accepted.
  - Otherwise, enter the Host Name and the IP address (take the data from the configuration table).
- Select **TEST**. The TEST command corresponds to a PING command. The response should be: “Host with IP address xxx.xxx.xxx.xxx is alive”.
- Select **connected by LAN**.

- Accept the entry with **Save** in the action bar.
- Acknowledge the message "...successfully saved" with **OK**.
- Repeat the steps described above until all network nodes are entered.
- The next screen appears by clicking on **>** in the action bar.



NOTE	**Verification is only possible after Save! (Might work only when the other node has configured the acquisition workstation.)**

The remaining data for the previously entered host(s) are supplemented here.

NOTICE

Here, only stations and systems should be entered that support the services: Storage SCP or Query/Retrieve or if there are syngo based stations.

Stations that use ONLY Storage SCU do not need to be entered. Transmitting from these stations to the acquisition workstation is still possible.

If stations with ONLY Storage SCU at the network nodes are entered, these appear incorrectly in the user interface in the list of transmit destinations.

- At **Logical name**, select **define new** or accept the entry.
- At **edit Name**, enter the name for the application as it is to be displayed later on the user interface (e.g. viewing station).
- Select **Syngo based** if this application is syngo based.
- In **Host**, select the network node.
- In **AE Title**, if already configured, select the **AE Title** or enter the AE Title (e.g. AE Title of the viewing station) and Port Number of the application (e.g. 50082) (take the information from the configuration table).
- In **Default Node**, select the default. The sequence **first default**, **second default** or **no default** is set. This setting is defined as which application is to be selected as the default.
- Only formats supported by the stations (e.g. Implicit little endian...) should be selected, i.e. highlighted in blue.
  Select **Compression** only if the other station supports Compression. In case of doubt look up or try out in the DICOM Conformance Statement!

NOTICE

If transfer syntax JPEG lossless should be used for sending images to a non syngo based network destination this destination must be configured as syngo based. Otherwise overlay graphics won't be transmitted.

NOTE

Do not use JPEG Lossy Compression!

NOTE

There are more than one AE Title in one host selection possible. (e.g. one for Image Transfer and one for QUERY and RETRIEVE.)

- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.

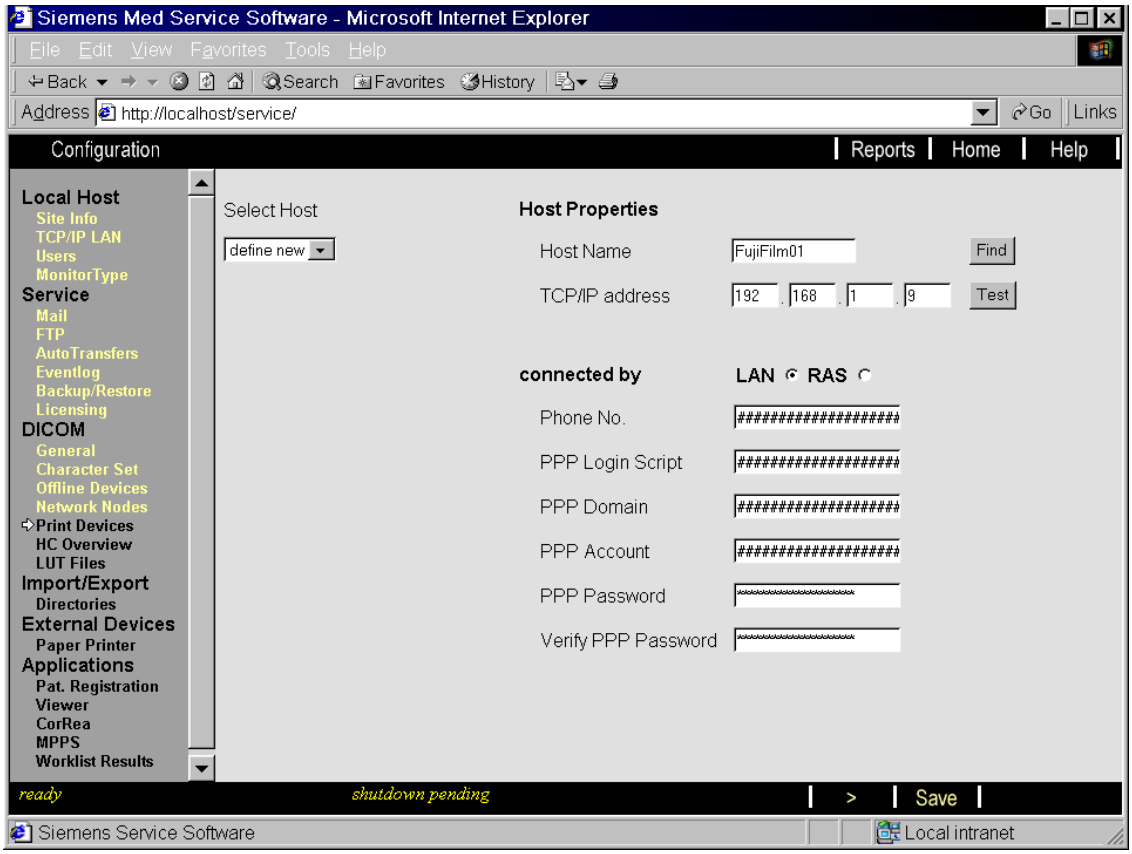
The connection can be tested using the **Verification** button. The TEST command corresponds to a C-Echo command. If the test is successful, the message “...is responsing” appears.

If there are different AETs defined for Storage, Query and Retrieve for individual modalities, they should each be entered with a new entry with different logical names.

- Repeat this procedure until all network components, even for different AE titles, have been entered.
- Select **Next** or **Finish** in the action bar.

Print Device settings (option)

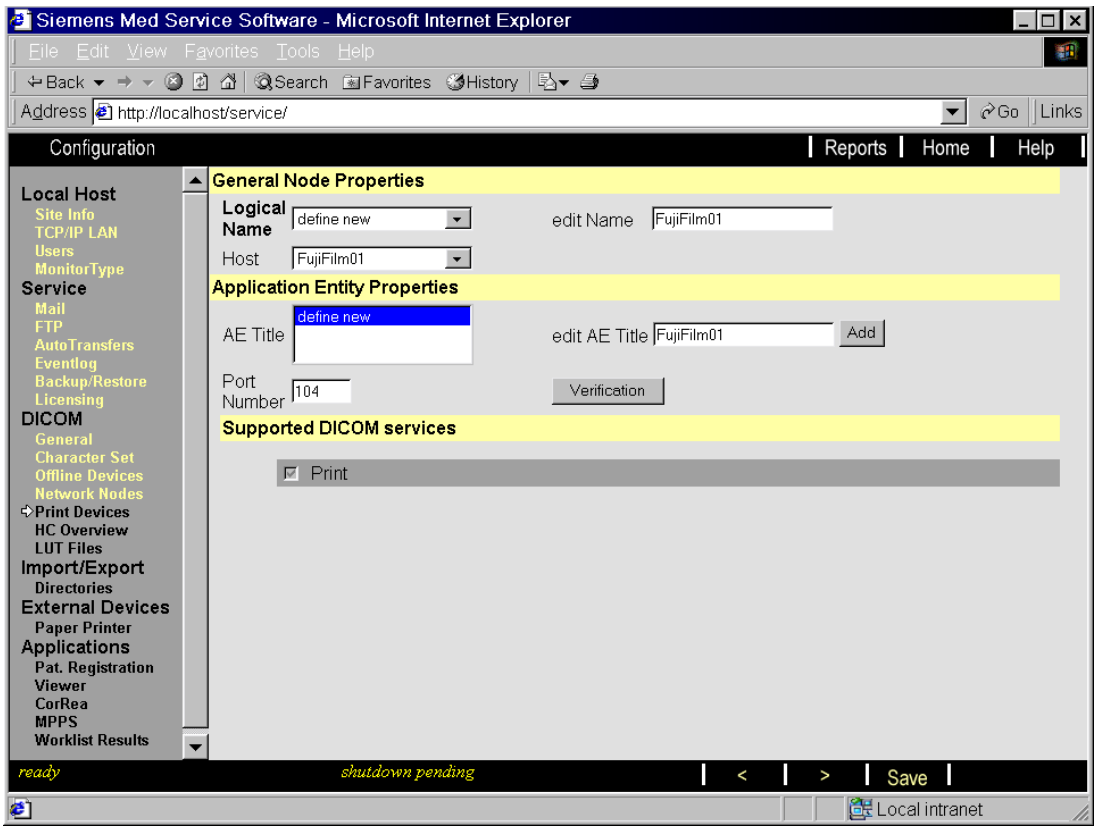
If selected, the configuration procedure runs automatically to the point Print Devices. If there are later additions and changes, manually select the point on the left under **DICOM**.



Configuration of hardcopy devices. Here you define the laser cameras and printers that are connected to your system. The example below describes the configuration for a Fuji FM DP-L.

- At **Select Host**, select **define new** or the configured camera.
- In **Host Name**, accept <network name> or enter a name.
  - If a name server is used and the application is configured in the network, it can be searched for using **FIND**.
  The response should be: “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address will then be accepted.
  - Otherwise, enter the Host name and the IP address (take the data from the configuration table).
- Using the **Test** button, attempt to reach the network component just configured. The TEST command corresponds to a PING command.
  If the test is successful, the message “...is alive” appears.
  If the test is not successful, the message “...is not alive” appears.
  A comparison of the entries for the network components and those that have been completed must then be made.
- Select **connected by LAN**.
- Select **Save** in the action bar to save the values that were entered.

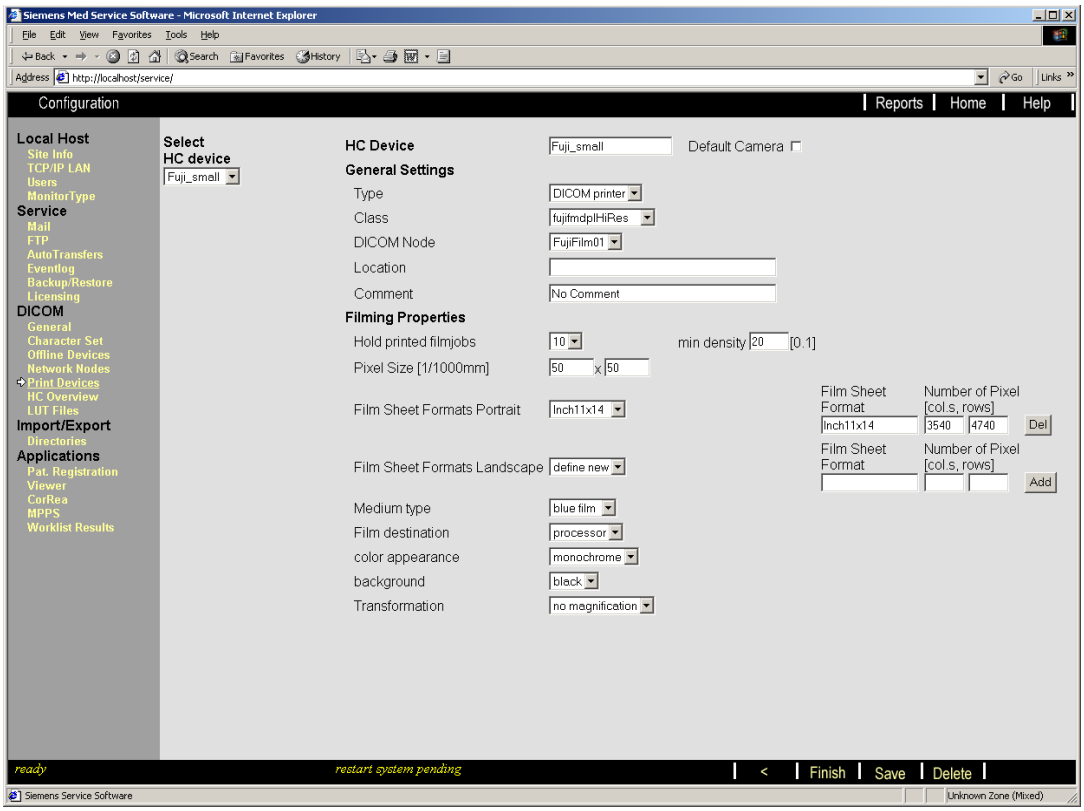
- Acknowledge the message "...successfully saved" with **OK**.
- Repeat the procedure until all cameras being used are entered.
- The next screen appears by clicking on **>** in the action bar.



Here, the remaining data for the previously entered host(s) is supplemented. Take the information from the configuration table.

- In **Logical Name** select **define new** or accept the entry.
- In **edit Name** enter the name for the hardcopy camera (e.g. FujiFilm01).
- In **Host**, select the corresponding name of the hardcopy camera (e.g. FujiFilm01).
- In **AE Title**, if already configured, select the AE title (e.g.Fujifilm01) or select **define new**.
- Accept the **Port Number** or enter one (e.g.104).
- Using the **Verification** button, attempt to reach the network component just configured.
  The Verification command corresponds to a C-Echo command.
  If the test is successful, the message "...is responding" appears.
  If the test is not successful, the message "...is not responding" appears.
  A comparison of the entries for the network components and the entries that have been made is then necessary.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Repeat the procedure as often as required until all hardcopy cameras being used are configured.

- The next screen appears by clicking on **>** in the action bar.



Below, hardcopy camera data for i.e. Fuji FM DP-L small images (18x24 cm) and large images (24x30 cm) is entered.

- At **Select HC Device**, select define new and enter the name for hardcopy camera as it will be displayed later on the user interface (e.g. Fuji_small).
- In **Type** select **DICOM printer**.
- In **Class** select the hardcopy camera name (e.g. fujifmdplHiRes).
- In **DICOM Node** select the configured hardcopy camera (e.g. FujiFilm01).
- In **Film Sheet Formats Portrait**, select **Inch11x14** and press the **Del** button.
- Select **define new** and enter **Inch11x14** at **Film Sheet Format**.
- In **Number of Pixel**, enter **3540** in **cols** and **4740** in **rows**.
- Select **Add**.
- In **Medium type** select the used medium.

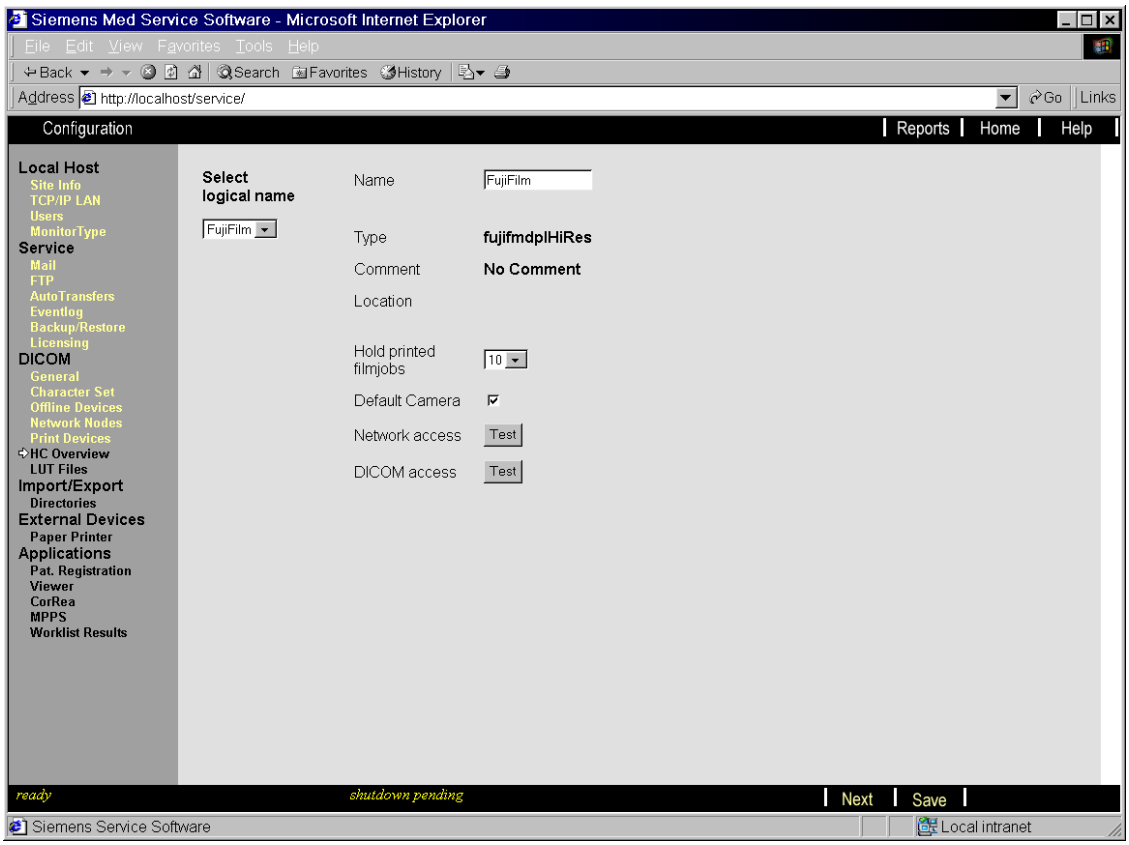
NOTICE **At Film Sheet Formats it might be necessary to select and delete the formats, which are not used!**

- At **Film destination** select the used destination.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.

- Repeat this procedure for large images e.g with the name Fuji_large.
  The Film Sheet Format is still Inch11x14. In **Number of Pixel**, enter **4728** in **cols** and **5928** in **rows**.
- Repeat the procedure as often as required until all cameras being used are configured.
- Select **Finish** in the action bar.

Hardcopy Overview

When selected, the configuration procedure runs automatically up to the point HC Overview. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.

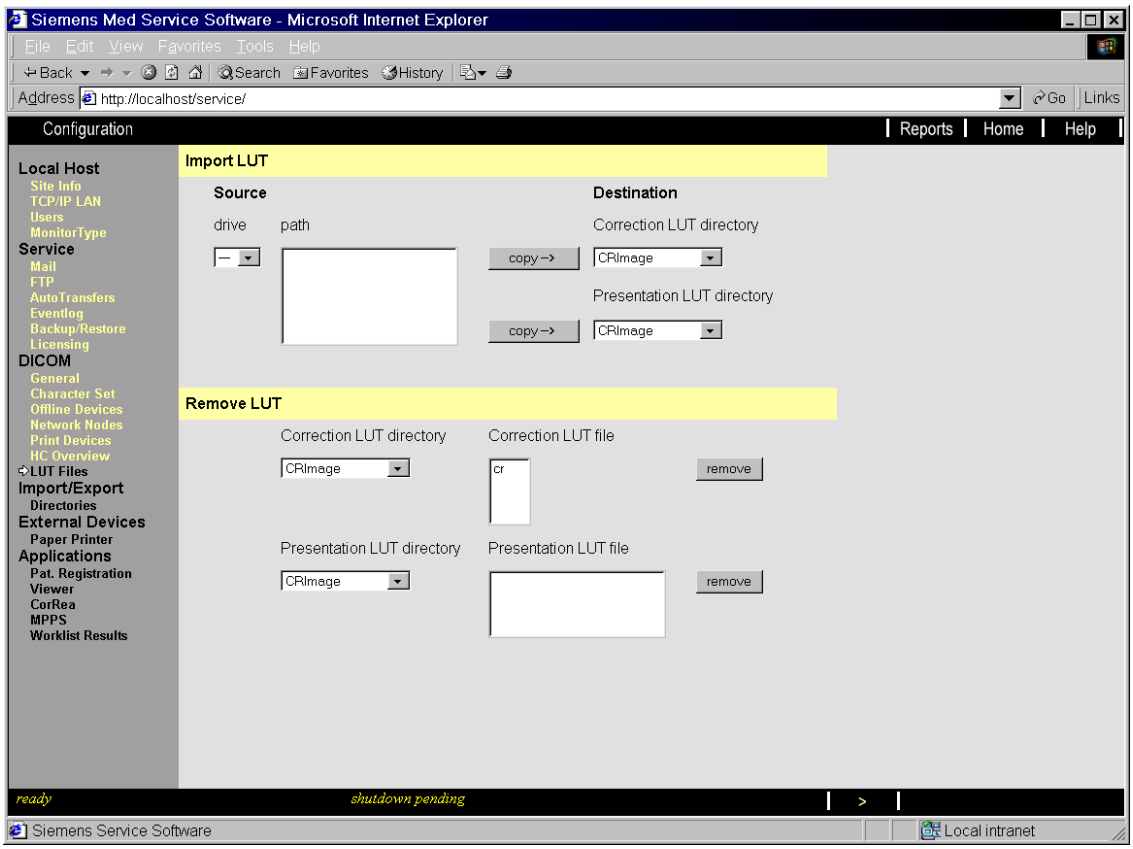


Here, modification and test capability of the previously entered data is done

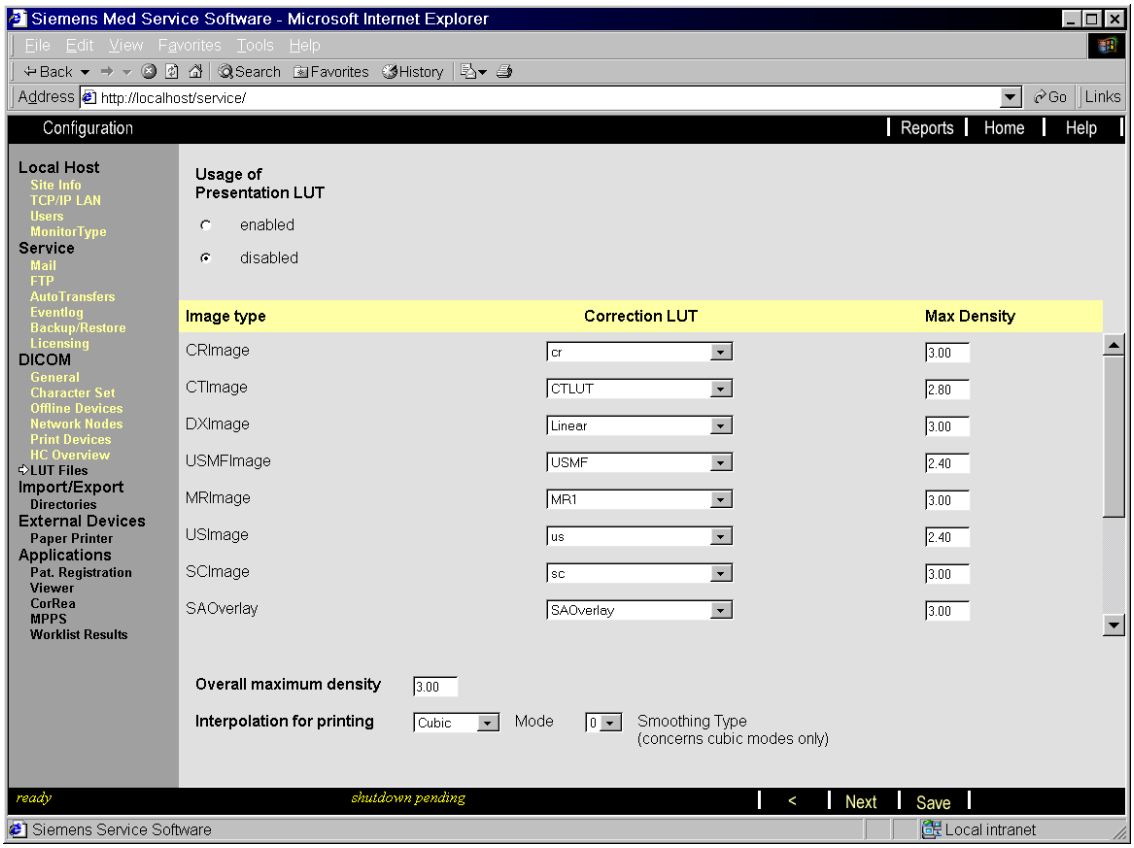
- Using the **Test** button, attempt to reach the network component just configured. The network access TEST command corresponds to a PING command.
  The DICOM access TEST command corresponds to a C-Echo command.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Select **Next** in the action bar.

LUT File settings

When hardcopy camera is selected, the configuration procedure runs automatically up to the point LUT files. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.



- Leave as it is.
- The next screen appears by clicking on **>** in the action bar.



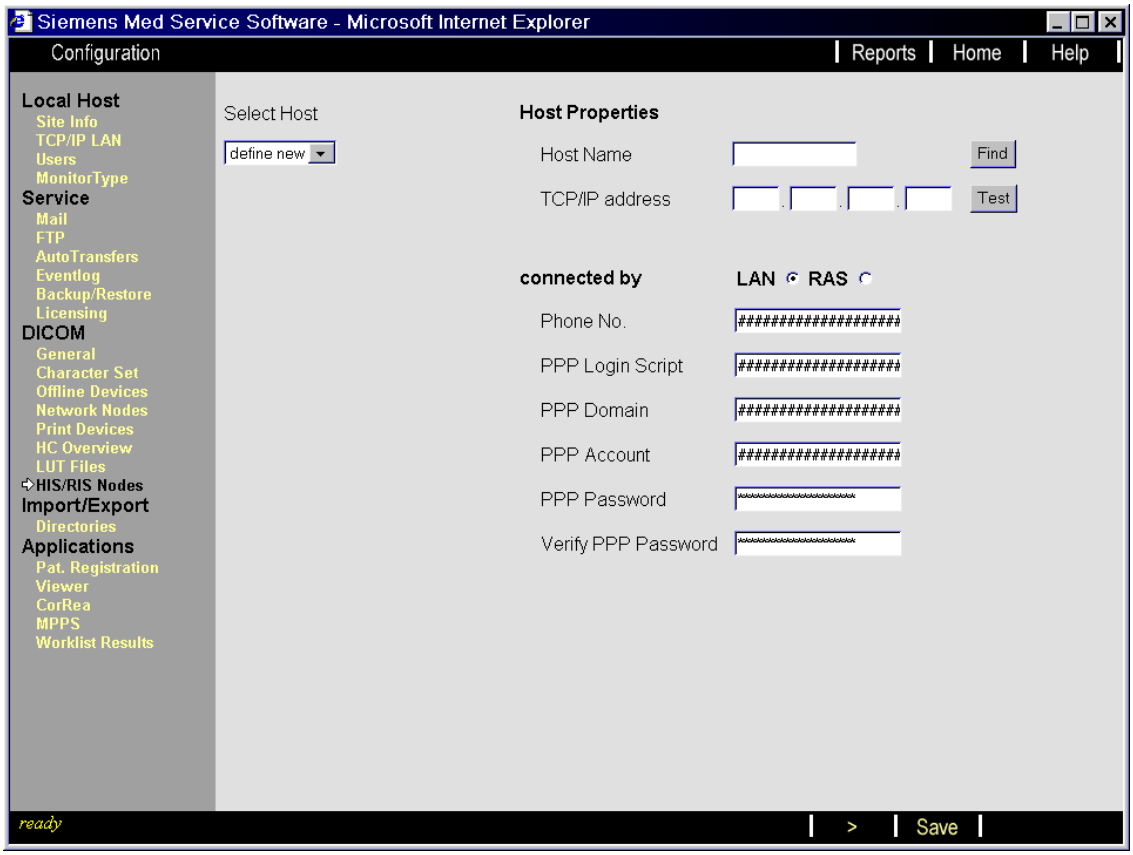
- Select the LUTs for the following image types:

Image type	LUT	Max Density
CRImage	cr	3.00
SCImage	sc	3.00
XAImage	xa	3.00
XRFImage	xrf	3.00
XABiPlaneImage	xabipl	3.00
DXMGImage	cr	3.00

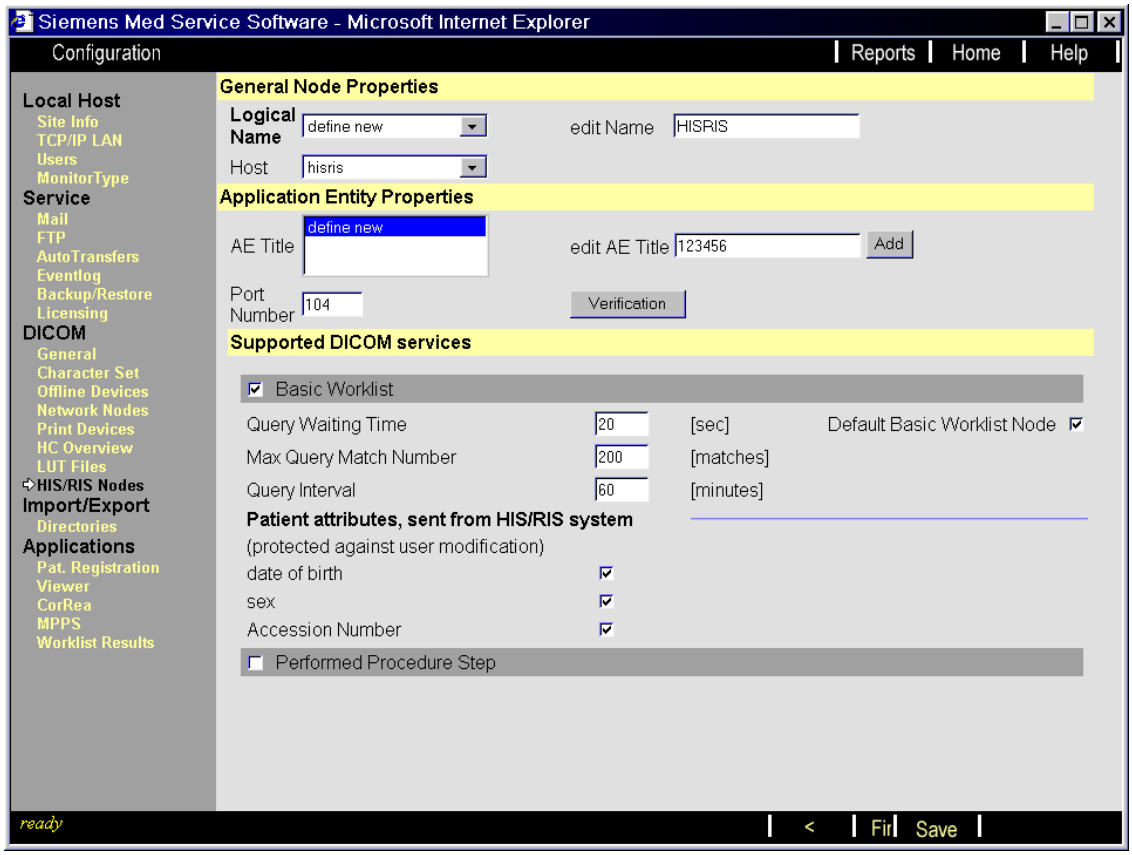
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message “...successfully saved” with **OK**.
- Select **Next** or **Finish** in the action bar.

HIS / RIS Node settings

If selected, the configuration procedure runs automatically up to the point HIS /RIS Nodes. If there are later additions or changes, manually select the point in the selection menu on the left under **DICOM**.



- In **Select Host**, select **define new** (with a new installation) or accept the entry (with components that are already configured).
- In **Host Name**, enter the name of the HIS/RIS node (e.g. HISRIS).
  - If a name server is used, and the HIS/RIS is configured in the network, it can be searched for by using **FIND**.
  The response should be: “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address will then be accepted.
  - Otherwise, enter the Host Name and the IP address (take the data from the configuration table).
- Select **TEST**. The TEST command corresponds to a PING command. The response should be: “Host with IP address xxx.xxx.xxx.xxx is alive”.
- Select **connected by LAN**.
- Accept the entry with **Save** in the action bar.
- Acknowledge the message “...successfully saved” with **OK**.
- The next screen appears by clicking on **>** in the action bar.

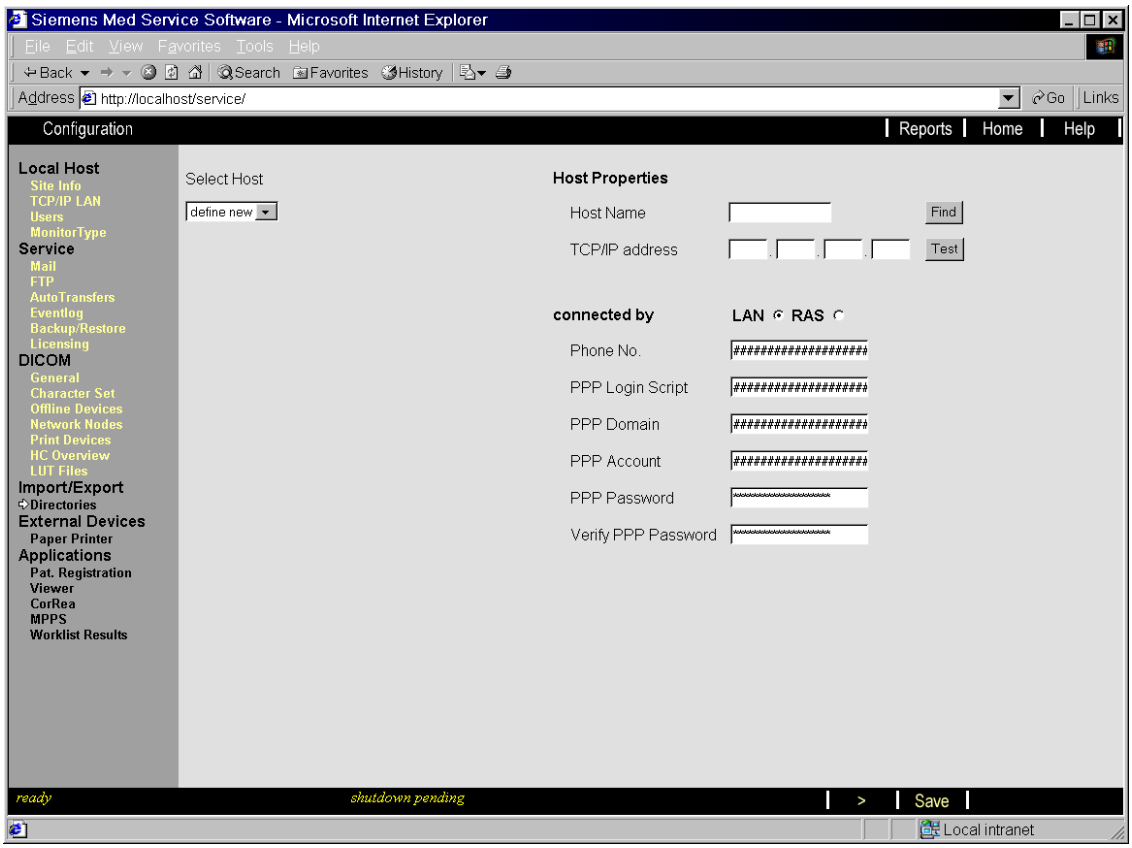


- In **Logical Name** select **define new** or accept the entry.
- In **edit Name** enter the name for the HIS/RIS (e.g. HISRIS).
- In **Host**, select the corresponding name of the HIS/RIS node (e.g. hisris).
- In **AE Title**, if already configured, select the AE title or select **define new**.
- Accept the **Port Number** or enter one (e.g. 104).
- Using the **Verification** button, attempt to reach the network component just configured.
  The Verification command corresponds to a C-Echo command.
  If the test is successful, the message “...is responding” appears.
  If the test is not successful, the message “...is not responding” appears.
  A comparison of the entries for the network components and the entries that have been made is then necessary.
- Select **Basic Worklist**.
- Select **Default Basic Worklist Node**.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message “...successfully saved” with **OK**.
- Select **Finish** in the action bar.

Import / Export

Directory Settings

If selected, the configuration procedure runs automatically up to the point Directories. If there are later additions or changes, manually select the point in the selection menu on the left under **Import/Export**.



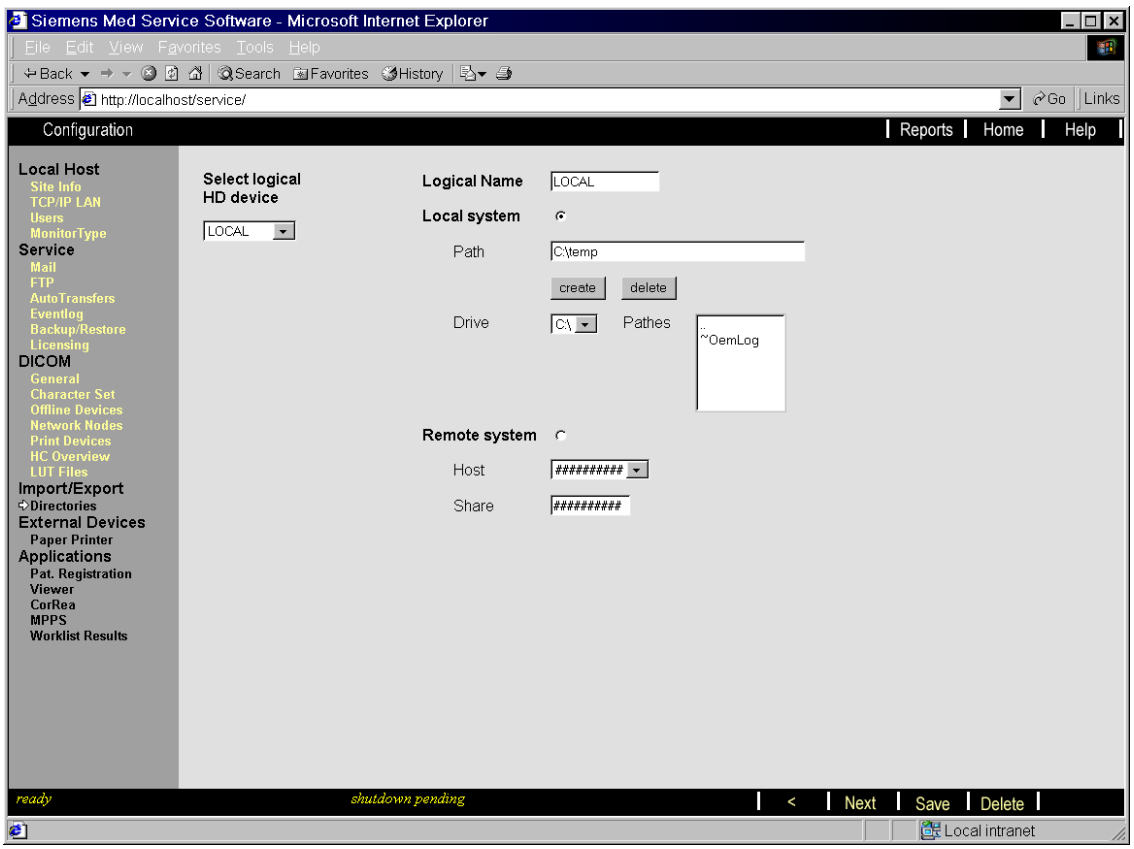
The directories function enables the location of the image import/export directory, i.e. the location named by your customer for importing/exporting patient images, to be specified. This import/export directory may be located on the local system or on a remote system on the network.

NOTE	**If the directory is not located on a remote system, click on > in the action bar.**

- At **Select Host** select **define new** or the existing Host.
- In **Host Name** enter network name or accept the name.
  - If a name server is used and the application is configured in the network, it can be searched for using **FIND**.
  The response should be “Host <name> is successfully resolved”.
  Confirm with **OK**. The IP address is accepted.
  - Otherwise, enter the Host Name and the IP address (take the data from the configuration table).
- Using the **Test** button, attempt to reach the network component just configured. The TEST command corresponds to a PING command.
  If the test is successful, the message “...is alive” appears.

If the test is not successful, the message "...is not alive" appears.
A comparison of the entries in the network components and the entries made must then be made.

- Select **connected by LAN**.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Repeat the procedure until all hosts have been entered.
- The next screen appears by clicking on **>** in the action bar.



Here, it is defined whether the import/export directory is connected locally or through the network.

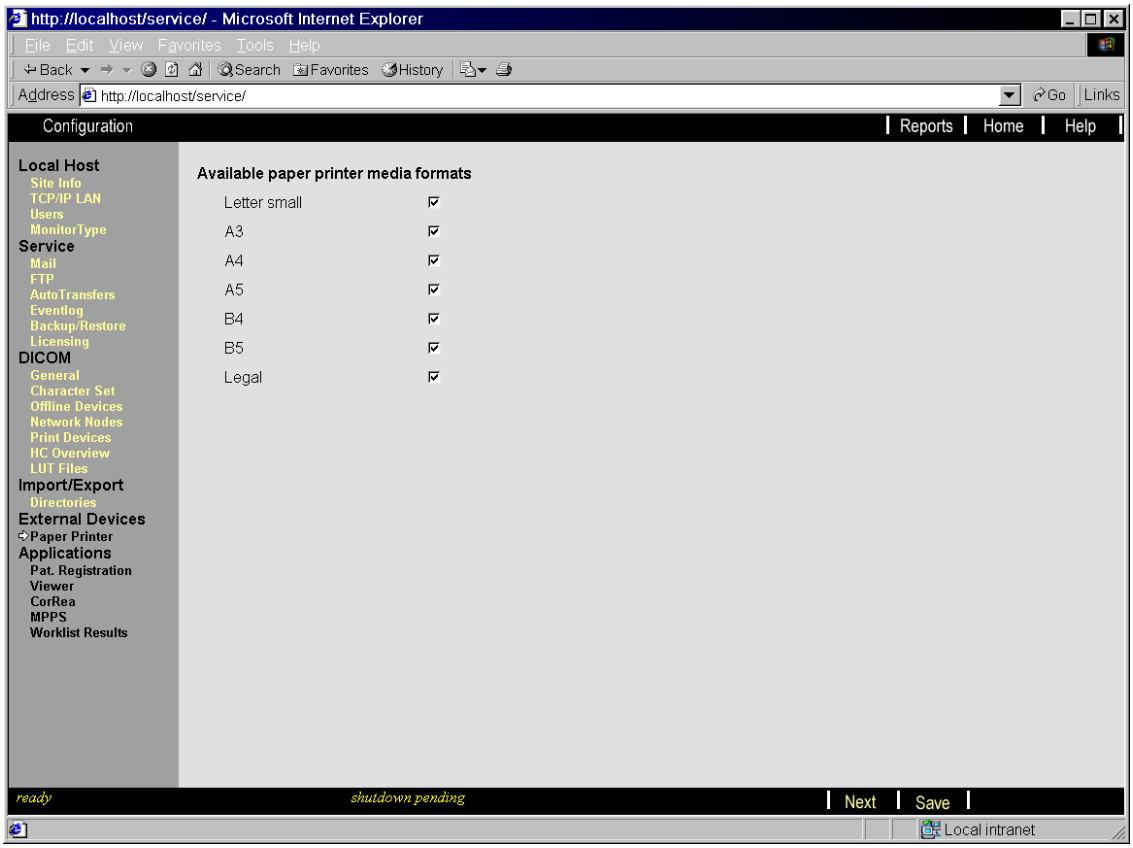
NOTE	**The default directory C:\ temp exists already!**

- Under **Logical Name**, enter a name for this machine.
- Select **Local system** or **Remote System**.
- At **Local system**, select the drive and enter the path. If the path does not exist, it can be entered and can be created using the **create** button.
- At **Remote system**, select the **Host** using the drop-down menu, or enter **Share**.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Select **Next or Finish** in the action bar.

External devices

Paper Printer settings

If selected, the configuration procedure runs automatically up to the point Paper Printer. If there are later additions or changes, manually select the point in the selection menu on the left under **External devices**.



- Select available media formats.
- Select **Save** in the action bar to save the values that were entered.
- Acknowledge the message "...successfully saved" with **OK**.
- Select **Next** in the action bar.

Applications

- Select **>** or **Next** until all points listed in the left of the screen are yellow.
- Select **Finish**.
- Select **Home** in the navigation bar.
- Acknowledge the message “...reboot is necessary” with **OK**.
- Perform a backup according to "Backup / Restore" on Page 8 - 1.
- Proceed with chapter 7 if remote access is available or with chapter 2 - 1 of the Start-up instructions.

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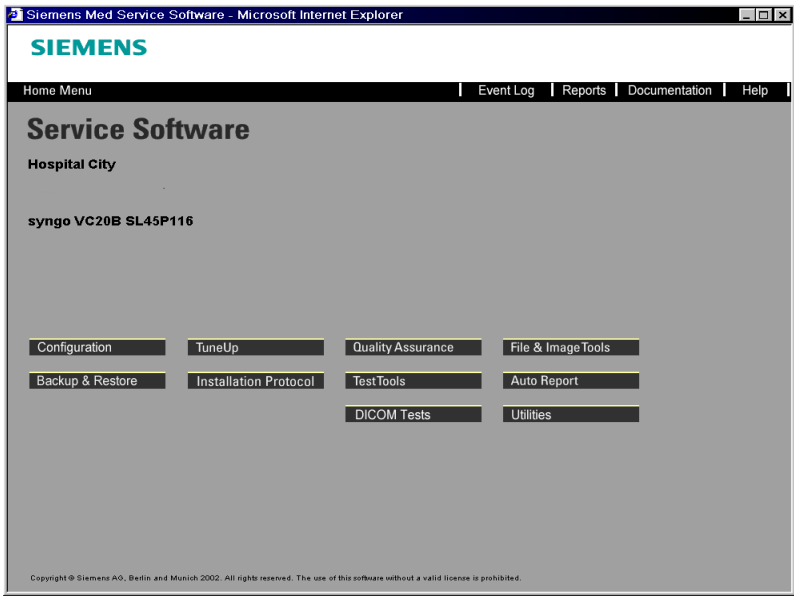
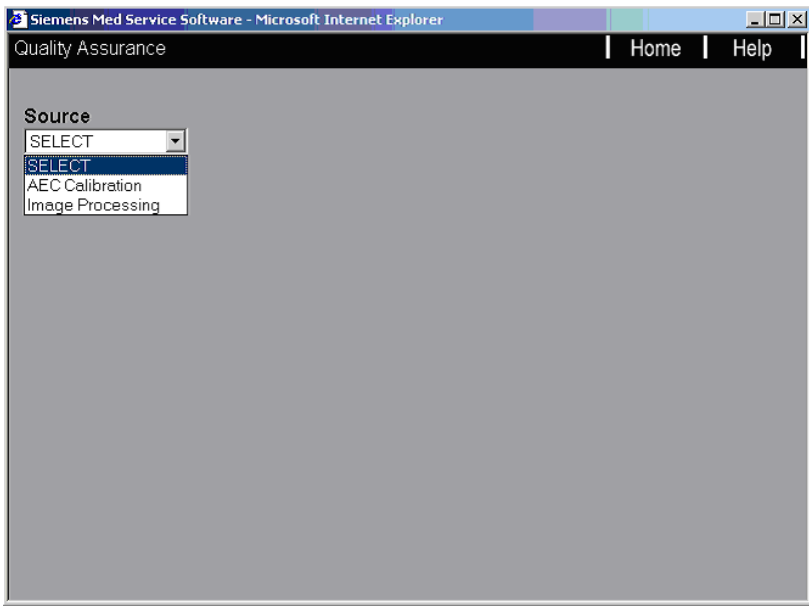
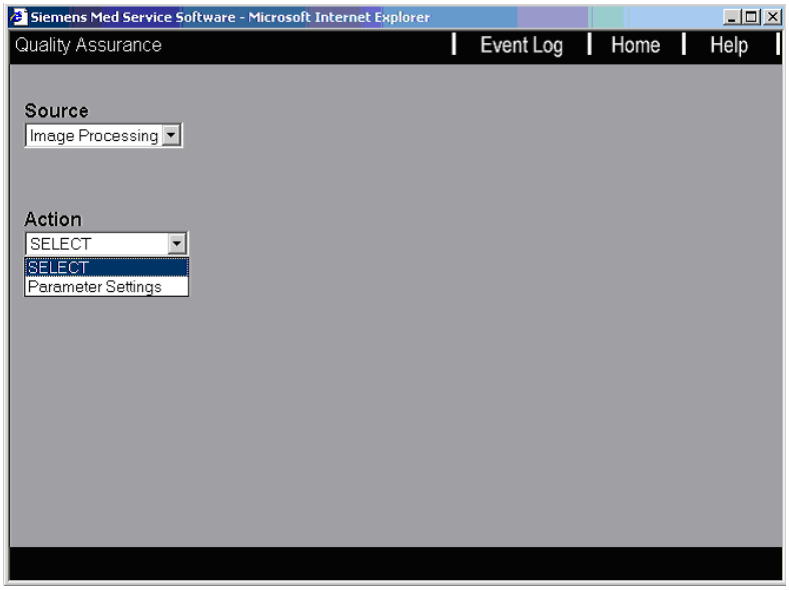
NOTE	This chapter is not applicable during an installation.



- In **Home Menu** Select **Quality Assurance**.



- In **Source** select **Image Processing**.



- In **Action** select **Parameter Settings.**
- The **Image Processing Parameter Window** appears.

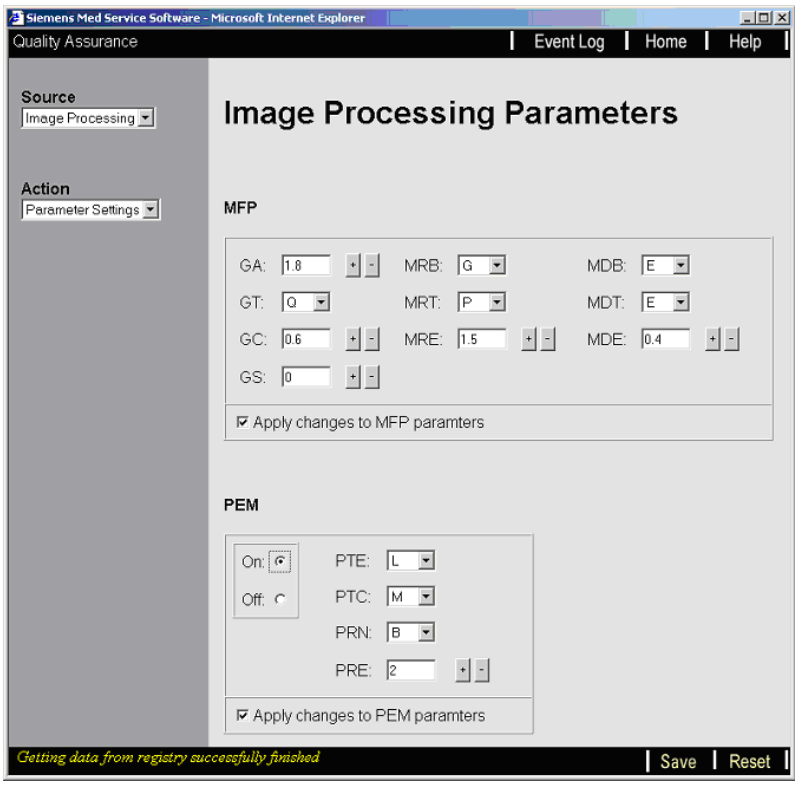


Image Processing Parameter Settings

In the Image Processing Parameter Window can Image Processing parameters be tuned by the CSE. By pressing reset, parameters will be set to a validated set of parameters. To be able to modify image processing the different parameters has to be explained.

DIGISCAN M will use an image processing software MFP (Multi-Objective Frequency Processing) from Fuji Photo Film Co., Ltd.

The controlling parameters can be divided in three groups:

- Gradation Processing
- Multi-Objective Frequency Processing (MFP)
- Dynamic Range Control (DRC)

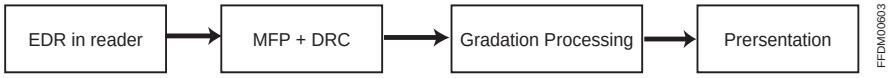


Fig. 1

Gradation Processing

Gradation processing is performed to convert the digital input data to an image with appropriate density and contrast.

The gradation process is controlled by the following four parameters:

- GT (gradation type)

  A curve providing gradation. Two curves for Mammography are provided.

- GA (rotation amount)

  Parameter for varying the contrast.

  $\gamma = \gamma(GT) \times GA$ The γ value determined by GT is multiplied by GA to obtain the final γ value.

- GC (rotation center)

  Density center for rotation. The density at the rotation center remains unchanged even when the GA changes.

- GS (density shift)

  Parameter for changing the density. Density change amount when GA = 1.0 for linear gradation.

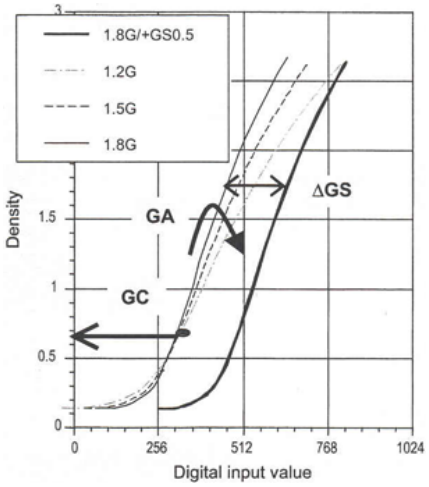


Fig. 2

Gradation process adjustment procedure

Most adjustment can be made by varying the GA and GS parameters. If such adjustments do not help, you should reassess the GT parameter. (There is no need to vary the GC parameter.)

First, vary the GS parameter so as to obtain the proper density

Next vary the GA parameter so as to obtain the proper contrast.

If, for instance, GA = 1.2 the resulting contrast is 1.2 times higher then exhibited when GA = 1.0.

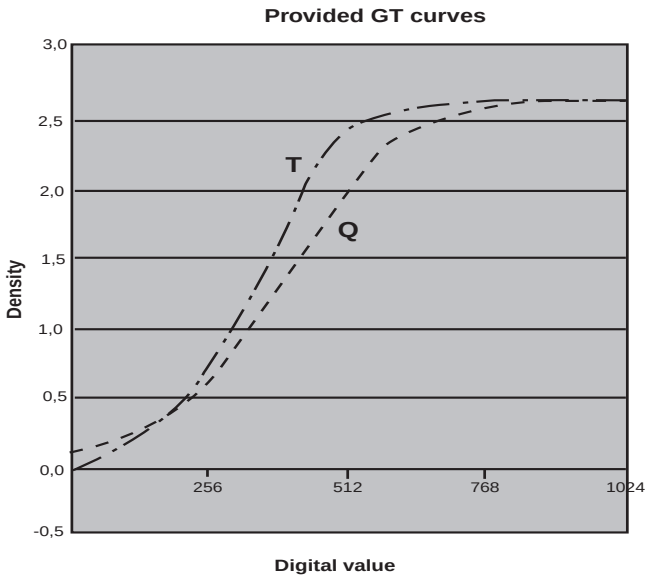


Fig. 3

Multi-Objective Frequency Processing (MFP)

Overview

The multi-objective frequency process (hereinafter referred to as the MFP) was developed intended to improve the diagnostic image quality provided by image processing. This new process depicts gray-scale shadows and shape shadows while providing natural appearing enhancements and offering a wide visibility range suitable to the diagnostic purpose. Moreover, this process makes well-balanced enhancements to all spatial frequency components and suppresses overshoots that might be caused by strong signals. Further considerations are also given to this process to avoid unnaturalness.

Radiograph features

The MFP can make well-balanced enhancements to various structures, from large to small ones. When used in conjunction with a gradation process, the MFP also offers the following features:

1. Gray-scale shadows and shape shadows can be enhanced in a well-balanced manner without sacrificing the graininess.
2. Invisible areas can be depicted with an increased degree of naturalness.
3. The degree of enhancement is suppressed for metals and other structures extraneous to the human body.

Principles

1. Process overview

The MFP has two functions: frequency enhancement for enhancing dot and line shadows and DRC for controlling the image dynamic range. In the basic MFP, smoothed images are first generated, after which the difference between each smoothed image is determined. The resulting difference-images are subjected to nonlinear conversion, and then the sum of the converted difference-images is used to perform frequency enhancement and DRC processes.

2. Smoothing Process and subtraction process

In the MFP's smoothing process, because weighting is conducted prior to smoothing, the resulting smoothed images are more natural than those derived from simple averaging. (See Fig. 4.) The frequency response shown in Fig. 5 indicates that the response characteristic is smooth.

The signal differentials between neighboring smoothed image signals have a response characteristic shown in Fig. 6, representing a so-called band pass signal consisting of specific frequency components.

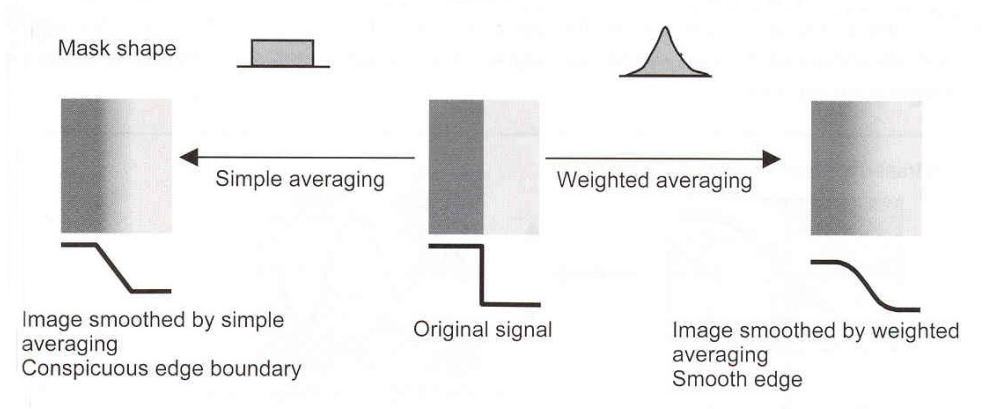


Fig. 4

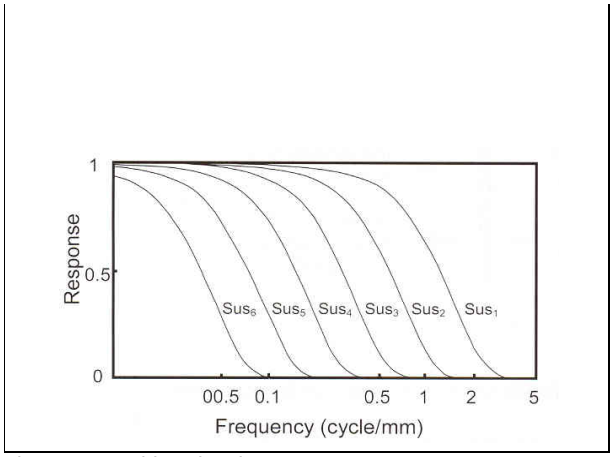


Fig. 5 Smoothing signal response

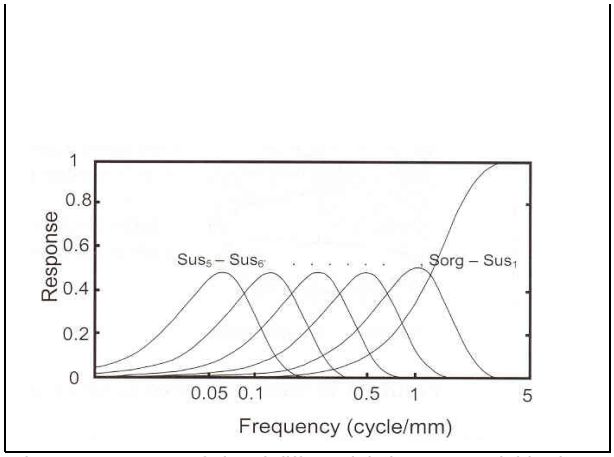


Fig. 6 Response of signal differentials between neighboring smoothing signals.

3. Enhancement signal components

All band pass signals (signal differentials between smoothed signals) are subjected to nonlinear conversion, which is detailed later. Further, they are added with their sizes adjusted to create basic enhancement signal components. A typical example is shown in Fig. 7.

The enhancement frequency response can be controlled as desired for enhancement signal components.

Unlike the conventional frequency process, a smooth response characteristic is obtained, minimizing the degree of unnaturalness inherent in processing.

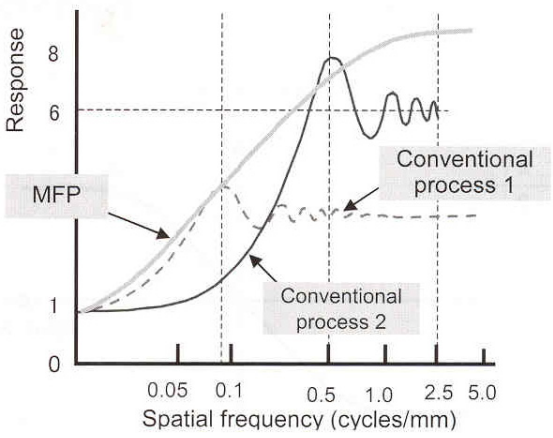


Fig. 7 Spatial frequency (cycles/mm)

4. Contrast-dependent nonlinear function conversion

If an image containing a metal or other strong signals is enhanced by the conventional process, artifacts may be generated around the signal. The MFP suppresses such strong signals, providing the enhanced image a natural look. With reference to Fig. 8, if, for instance, a band pass signal (difference-image signal) having a relatively low contrast (as indicated by (1) in the figure) is entered in relation to the indicated nonlinear function, the resulting output signal (1)' has the same contrast as the input signal. However, if a high-contrast signal is entered (as indicated by (2), it is converted to generate an output signal having a lower contrast (2)').

When the nonlinear function is used in the frequency enhancement process, the very small signals with low contrast are enhanced normally while the degree of enhancement is suppressed for metal portions and other high-contrast edges.

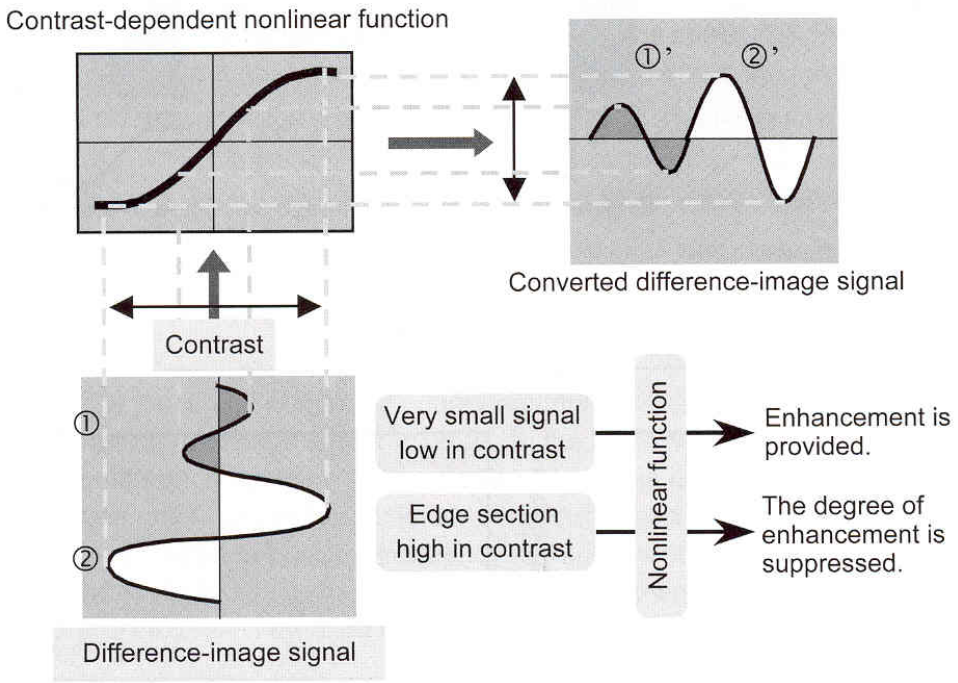


Fig. 8 Mechanism of contrast-dependent frequency enhancement

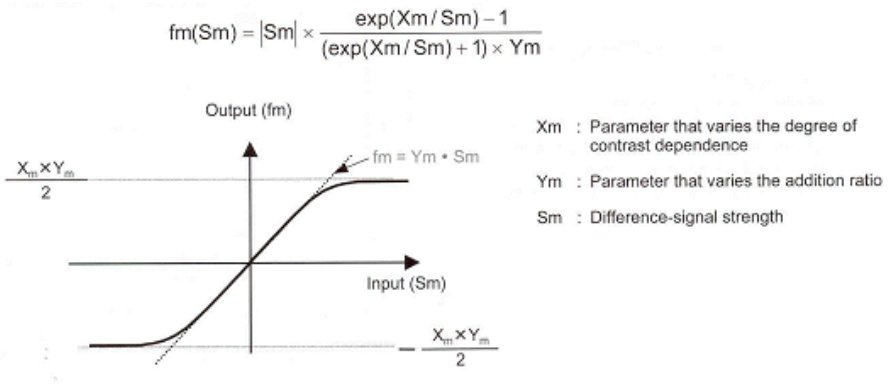


Fig. 9 Contrast-dependent nonlinear function

5. Actual enhancement characteristic

The MFP's frequency enhancement function offers various parameters that enable you to freely control enhancement frequency characteristics. A typical response function for normal expression is shown in Fig. 7. In actuality, the response characteristic has the frequency response and contrast characteristic variables shown in Fig. 10. While these let you adjust various frequency components and the degree of contrast dependence, sophisticated knowledge of adjustments is also required.

To avoid this expertise issue, various parameters are predefined for implementing standard frequency responses so that you can perform frequency enhancement processes having various frequency responses simply by choosing a frequency balance type.

The DIGISCAN M system has two different response characteristics, or balance type parameters. To facilitate the comparison of the frequency responses, Fig. 10 shows the frequency responses in the low-contrast region when the degree of enhancement (MRE) is 1.0.

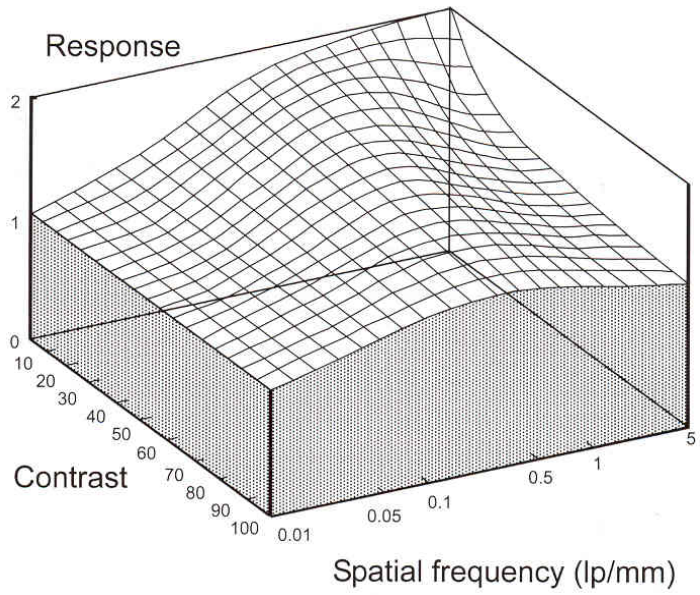


Fig. 10

DRC process based on edge-retention smoothing signal components

The conventional DRC process obtains smoothed images by simple averaging. The images smoothed by the MFP's DRC process retain edges; when the contrast is high, the high-frequency response is retained.

Fig. 11 is used to explain why such a complicated process is performed.

Images having unsmoothed high-contrast edges (referred to as edge-retaining smoothed images) are used for the MFP's DRC function that smoothes low-contrast signals, which enables adequate DRC near edges to depict invisible areas in a relatively natural manner (G).

On the basis of the edge-retaining smoothed image characteristic determined by the MFP's DRC balance type (MDB), the optimum DRC process is implemented by the multi-DRC enhancing type (MDT) and MFP's degree of multi-DRC enhancement (MDE).

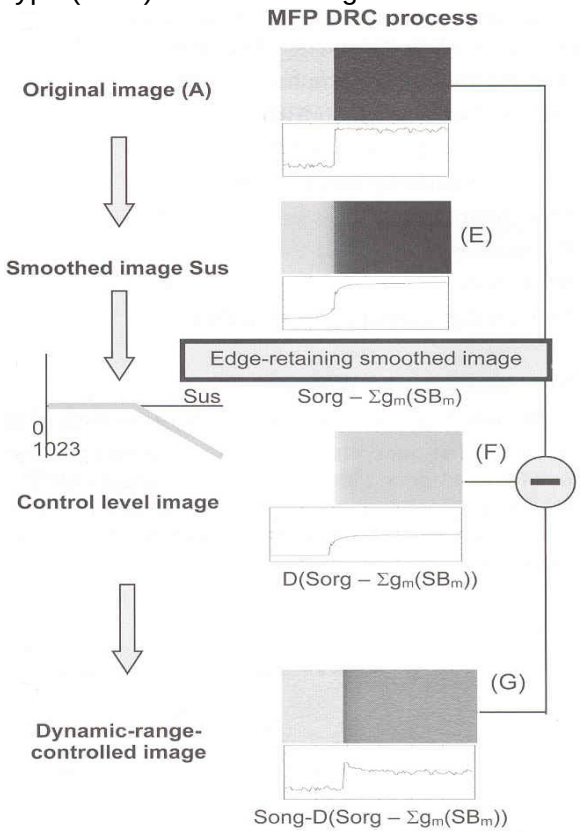


Fig. 11

Parameter overview

The MFP includes the following six types of parameters: Three types that control the frequency enhancement and the other three types that control the DRC.

Parameters that control frequency enhancement:

- Multi-frequency balance type (MRB)
- Multi-frequency enhancing type (MRT)
- Degree of multi-frequency enhancement (MRE)

Parameters that control the DRC:

- Multi-DRC balance type (MDB)
- Multi-DRC enhancing type (MDT)
- Degree of multi-DRC enhancement (MDE)

Multi-frequency balance type (MRB)

This type of parameter represents frequency characteristics of enhanced images. One balance type, G, are available. Type G mainly enhances higher frequencies.

Multi-frequency enhancing type (MRT)

The parameter MRT is a table that uses image signal digital values (virtually proportional to density) to determine the degree of enhancement variously for all densities. Two tables P and R are provided. P is recommended.

Degree of multi-frequency enhancement (MRE)

Before determining the degree of frequency enhancement, it is necessary to determine the degree of difference image (the edge extraction image) addition the degree of such addition is determined by the parameter MRT. However, if the enhancement is provided indiscriminately the resulting image will appear coarse because of the tendency of low-density portion to be noisy. Value ranges from 0.0 to 1.6.

Multy-DRC balance type (MDB)

This parameter represents frequency characteristics of smoothed images. One type E is provided.

Multy-DRC enhancing type (MDT)

This parameters determines the density range over which DRC is to be exercised. Two parameter value E or F is provided for high density control.

Degree of multy-DRC enhancement (MDE)

This parameter determines the degree of control. An excessively high setting will cause white/black image reversal, fog significantly the image of a low-density area, or lower the highest density of a high-density controlled area. Parameter can be set from 0 to 1.0. A setting of 0.6 or lower should normally be used.

Pattern Enhancement Processing for Mammography (PEM)

NOTE

PEM is software component from Fuji Photo Film Co., Ltd.

Fuji Photo Film Co., Ltd verifies its effectiveness. It can turned on or off and tuned by parameters described below i our application.

Considering that fine calcification images are likely to be less visible on the digitized mammography image, we have invented and developed, based on the image recognition technology, image processing that extracts and enhances locations that look like calcification images.

This image processing is employed exclusively for mammography images. Extraction and enhancement of the location assumed to be calcified on the mammography image will make processing possible to handle such image without deteriorating granularity on the whole image. If this image processing is combined with Multi-objective Frequency Processing (MFP) and/or conventional frequency processing, the following features will be provided.

1. Well-balanced images can be obtained by separately controlling enhancement of tumor shadows and calcification images, without deteriorating the image granularity.
2. Oversights in breast examinations can be avoided by enhancing signals that are suspicious of calcification images.

Parameter overview

The following four parameters are available for PEM.

- PEM Enhancement Coefficient (PRE)
- PEM Enhancement Ranking (PRN)

- PEM Edge Information Detection Level (PTE)
- PEM Calcification Image Information Detection Level (PTC)

PEM Enhancement Coefficient (PRE)

PRE is a parameter of the same definition as that of RE of the conventional frequency processing. PRE defines the degree of enhancement of a calcification image and values range from 0.0 to 9.9 and 10 to 16.

PEM Enhancement Ranking (PRN)

PRN is a parameter of the same definition as that of RN of the conventional frequency processing. For the parameter range, mask sizes are defined from A to E. Table 7.1 shows the relationship between PRN and the equivalent frequency band on the IP. Mask sizes for PRN have been defined based on the frequency bands listed in this table.

PRN	A	B	C	D	E
Spatial frequency on the IP (Cycle/mm)	8.00	5.66	4.00	2.83	2.00

PEM Edge Information Detection Level (PTE)

PTE is a parameter that defines the edge information detection level for PEM. Using PTE, edge information detection signals are converted to the edge information detection levels. For the parameter range, edge information detection levels are defined from A to J.

Fig. 12 shows definitions of level A to J of PTE. The detection levels have been set to shift to the right one by one as the alphabet goes from A to J.Thus, the lowest edge detection level is J.

In addition, because the edge detection level depends on both the noise level (S value) and the contrast (L value) of the target image, PTE is corrected based on the PTE level selected according to parameters mentioned above, depending on the S and L values for each image.

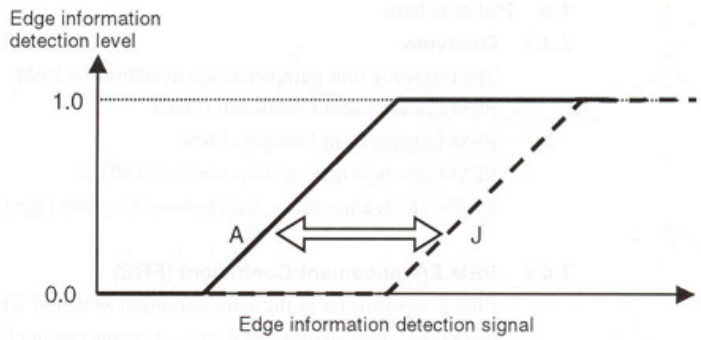


Fig. 12 Definition of PTE

PEM Calcification Image Table (PTC)

PTC is a parameter that defines the calcification image detection level for PEM. Using PTC, calcification image position detection signals are converted to the calcification image information detection levels. For the parameter range, calcification image detection levels are defined from A to J. Fig. 13 shows. definitions of level A to J of PTC. Same as for PTE, the detection levels have been set to shift to the right one by one as the alphabet goes from A to J. Thus, the lowest calcification image detection level is J.

In addition, because the calcification image detection level depends on both the noise level (S value) and the contrast (L value) of the target image, PTC is corrected based on the PTC level selected according to parameters mentioned above, depending on the S and L values for each image.

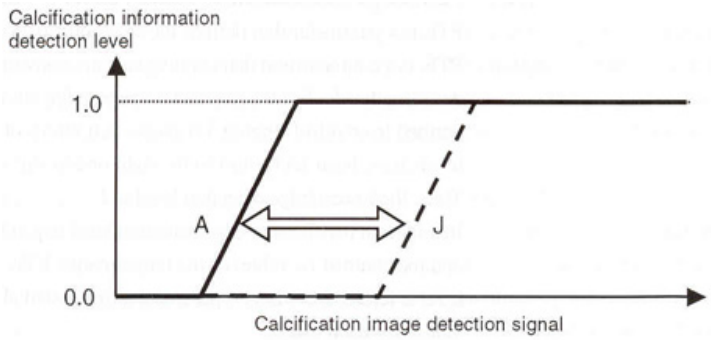


Fig. 13 Definition of PTC

NOTE

For further information about remote configuration, please refer to:

http://www-td.med.siemens.de/Product Information/Planning/ General...

Siemens Remote Services Print No.: TDIT-000.891.01... .

General remarks

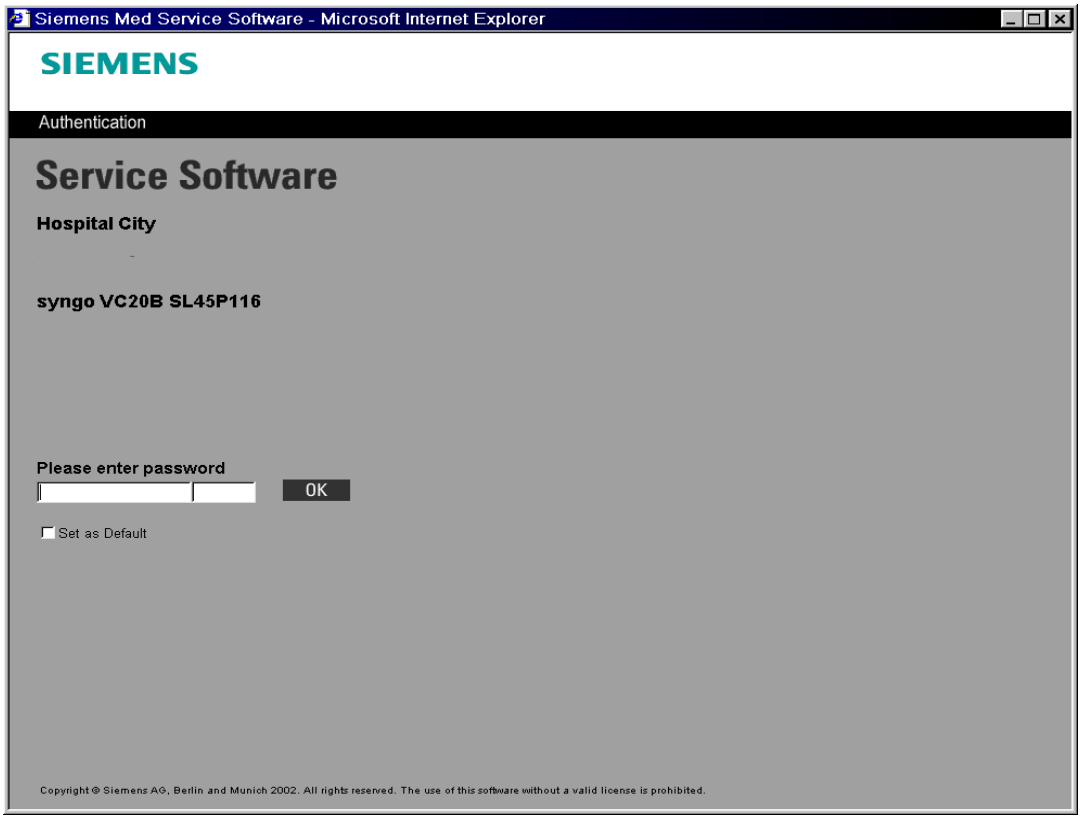
An access must be enabled at the acquisition workstation for the remote connection. To do this, define an access mode in **Option > Remote Service**. If not otherwise required, **Limited Access Permanent** should be set. The procedure should be discussed with the customer.

Access server

Server	Access	Router Host name	Router IP	Telephone No.	RDIAG Server IP
Europe	ISDN	rt-de-fth23	194.138.39.9	+49 911766680	194.138.39.18
	Analog			+49 9119782300	
Asia	ISDN	rt-sg-sgp1013	194.138.243.169	+65 5875603	194.138.243.178
	Analog			+65 7837842	
America	ISDN	rt-srs-ext1	12.46.135.201	+1 510 252 0211	12.46.135.210
	Analog			+1 510 659 1537	

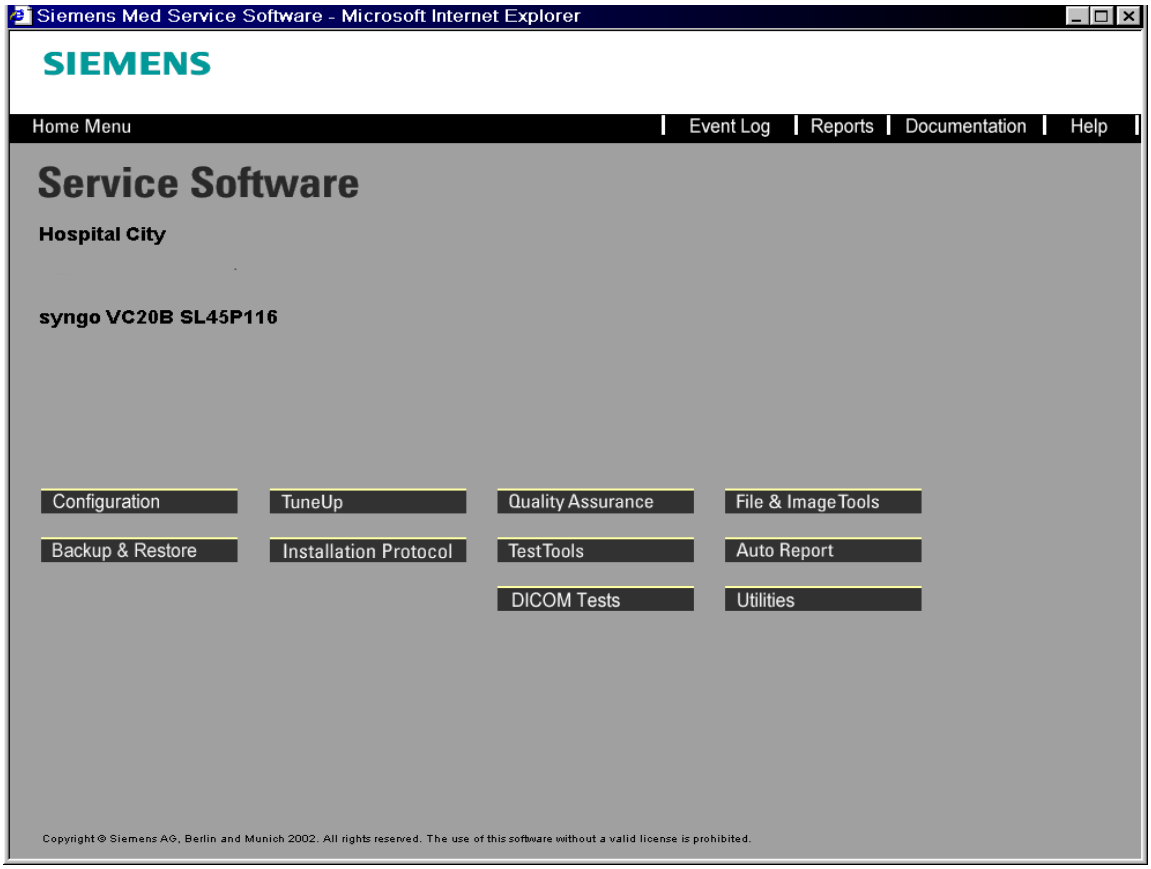
Auto report activating / setting

- Select **Options > Service > Local Service** in the window menu header.



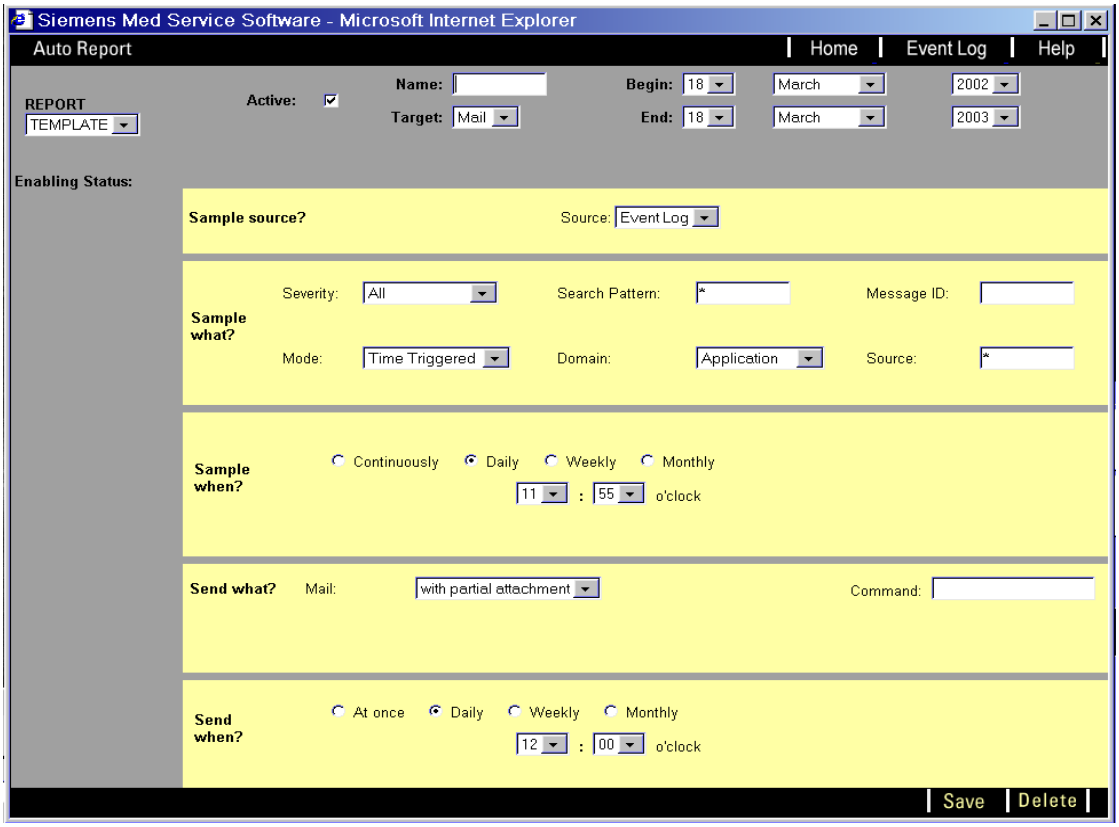
- Enter the service key (6 characters in 2nd mask).
- Confirm the screen with **OK**.

The service home menu appears.



- Select **Auto Report**.

- In **REPORT** select **Template**.

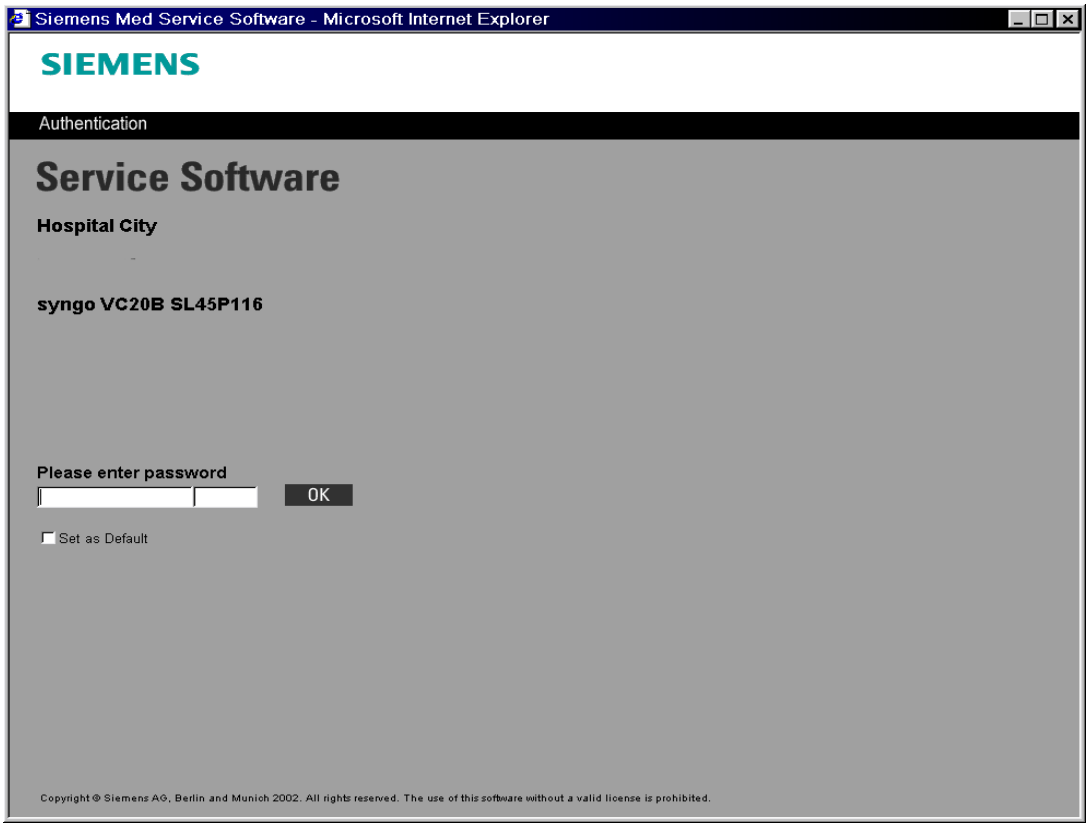


- In **Name**, write: mg + the last 4 digits of the serial number of the DIGISCAN M system (the name may be a max. of 7 characters) (e.g.:mg01023).
- In **Sample source?**, select **Event log**.
- In **Sample what?**,
  select **All** in Severity,
  type “*” in Search Pattern,
  select **Time Triggered** in Mode,
  select **Application** in Domain,
  type “*” in Source.
- In **Send when?**, select the time for the auto report as agreed on with Siemens Remote Services.
- Do not change other parameters.
- Click on **Save** in the action bar.
- Click on **OK**.
- Click on **OK**.
- Close the window with **Home**.
- Proceed with chapter 2 - 1 of the Start-up instructions.

Backup

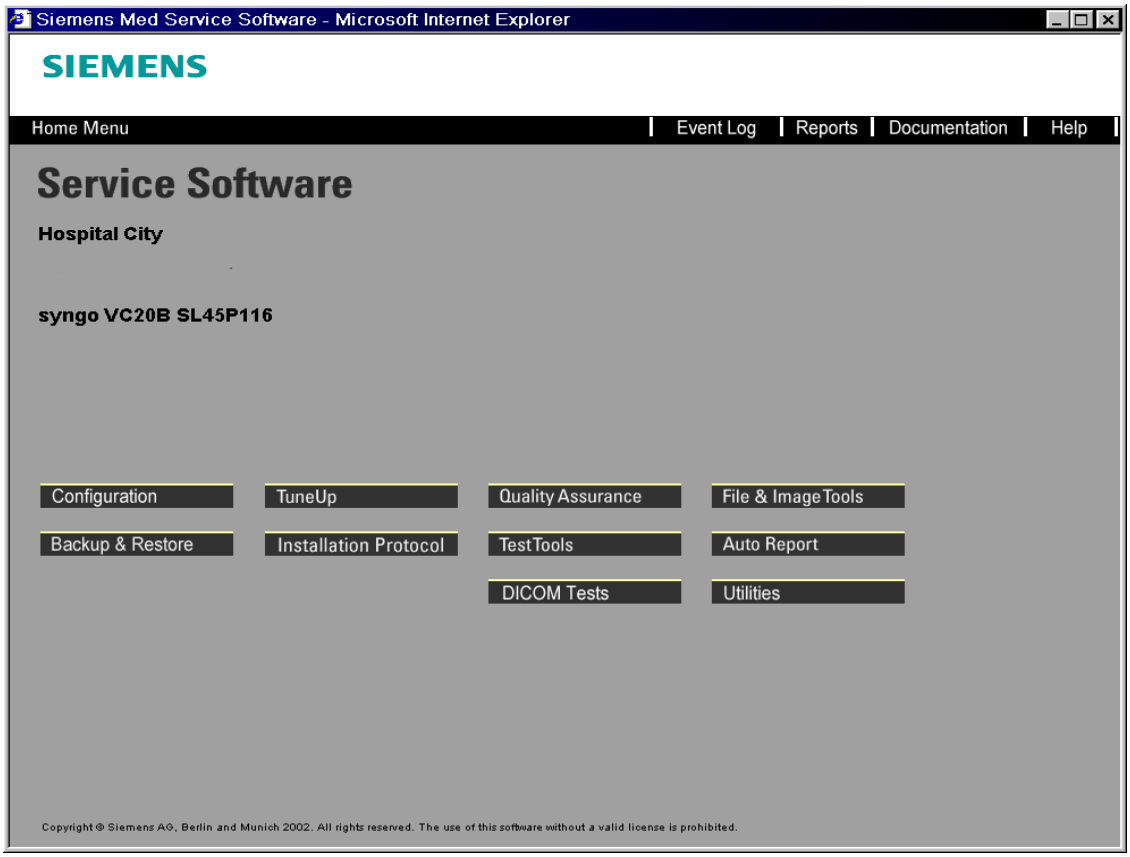
A backup from system-specific tables, similar to tune-up tables or customer specific configuration entries, is always necessary after software updates or system adjustment steps.

- Select **Options > Service > Local Service** in the window menu header.



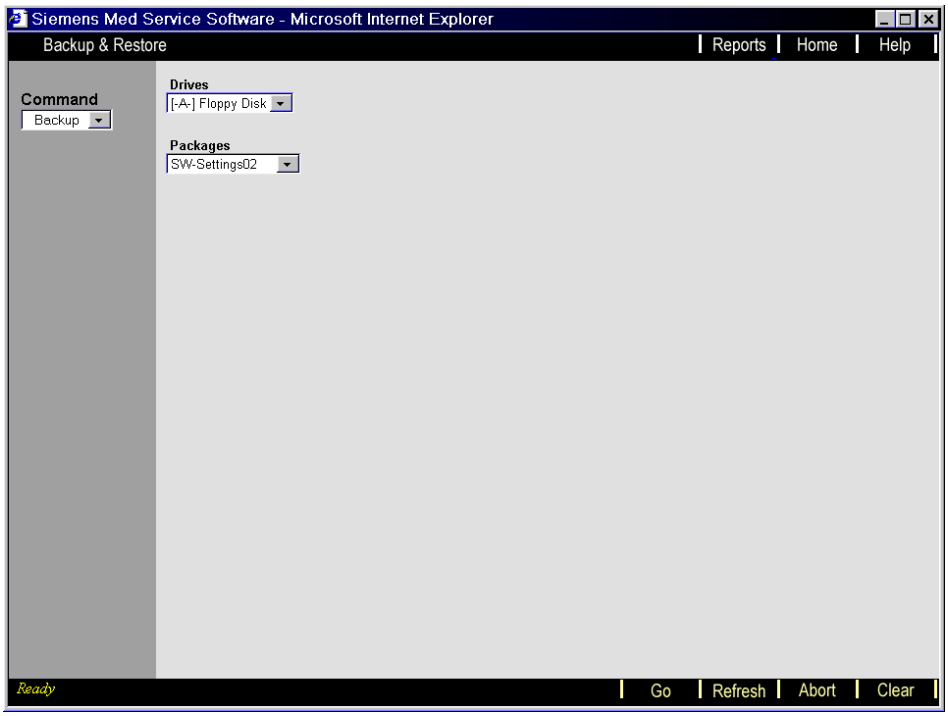
- Enter the service key (6 characters in 2nd mask).
- Confirm with **OK**.

The service home menu appears.



- Select **Backup & Restore**
- Insert the backup floppy disk into drive A:.

The following window appears:



- In the **Command** selection menu, select **Backup**.
- In **Drives**, select the particular storage medium. As a standard, save to a floppy disk (-A-).
- In **Packages**, select **SW Settings02** and accept the entry with **Go** in the action bar.
- Wait until ready message appears in the action bar.

NOTICE

If subsequent changes, e.g. in the configuration, need to be made, the corresponding backup package must be saved again.

- Exit the window with **Home**.
- Remove the backup floppy disk from drive A:.

NOTICE

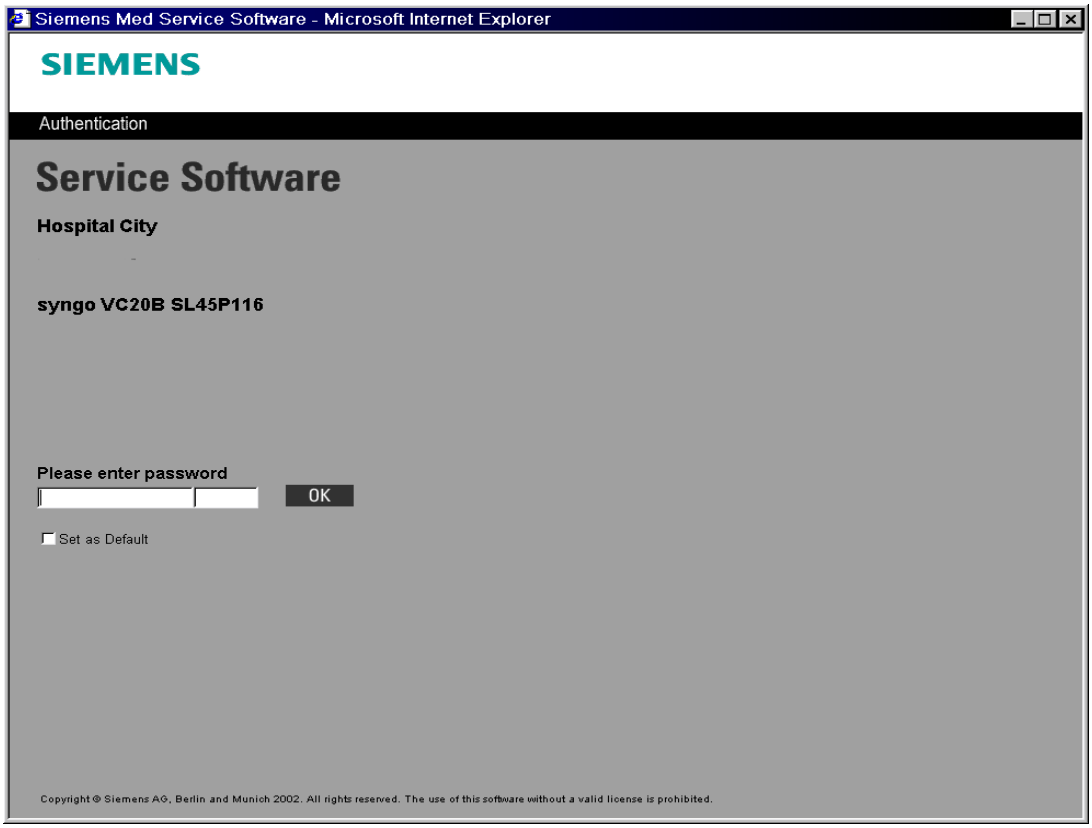
A backup of the database (patient images) does not function!

Only the following is possible:

Saving the patient images to a MOD or CD-R.

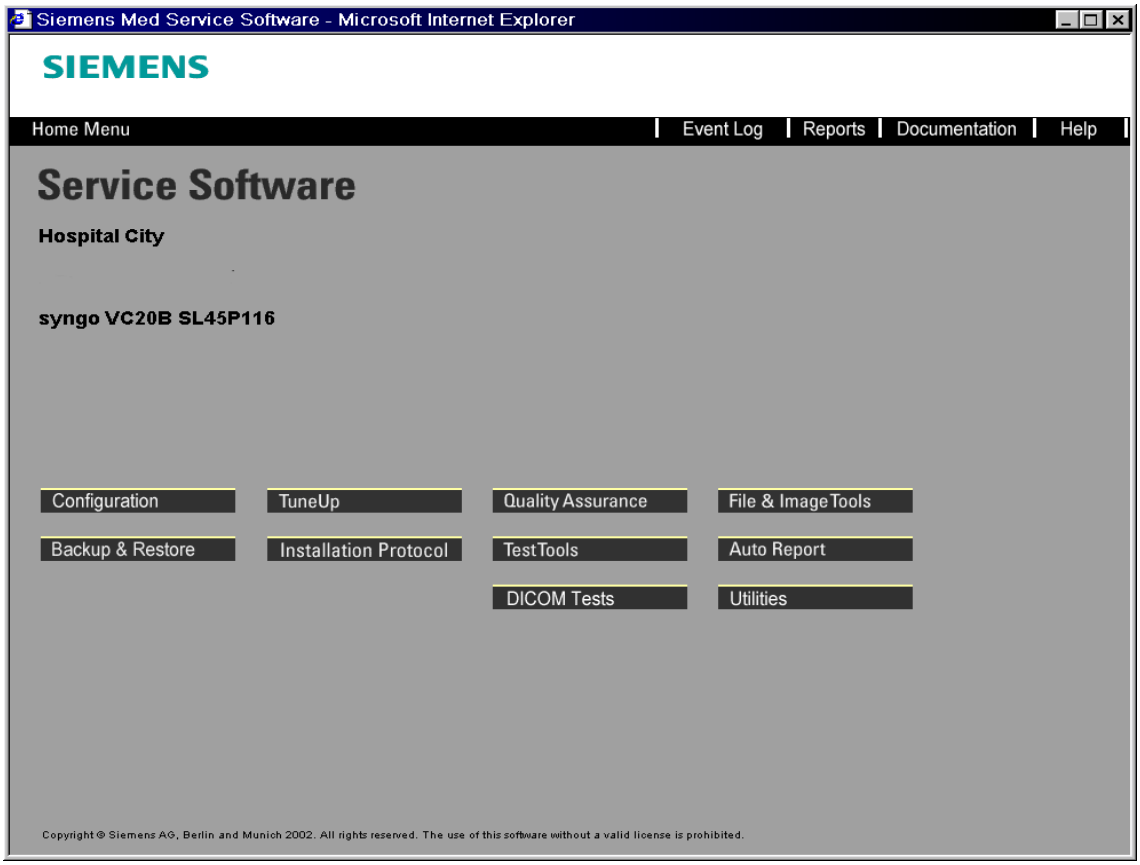
Restore

- Select **Options > Service > Local Service** in the window menu header.



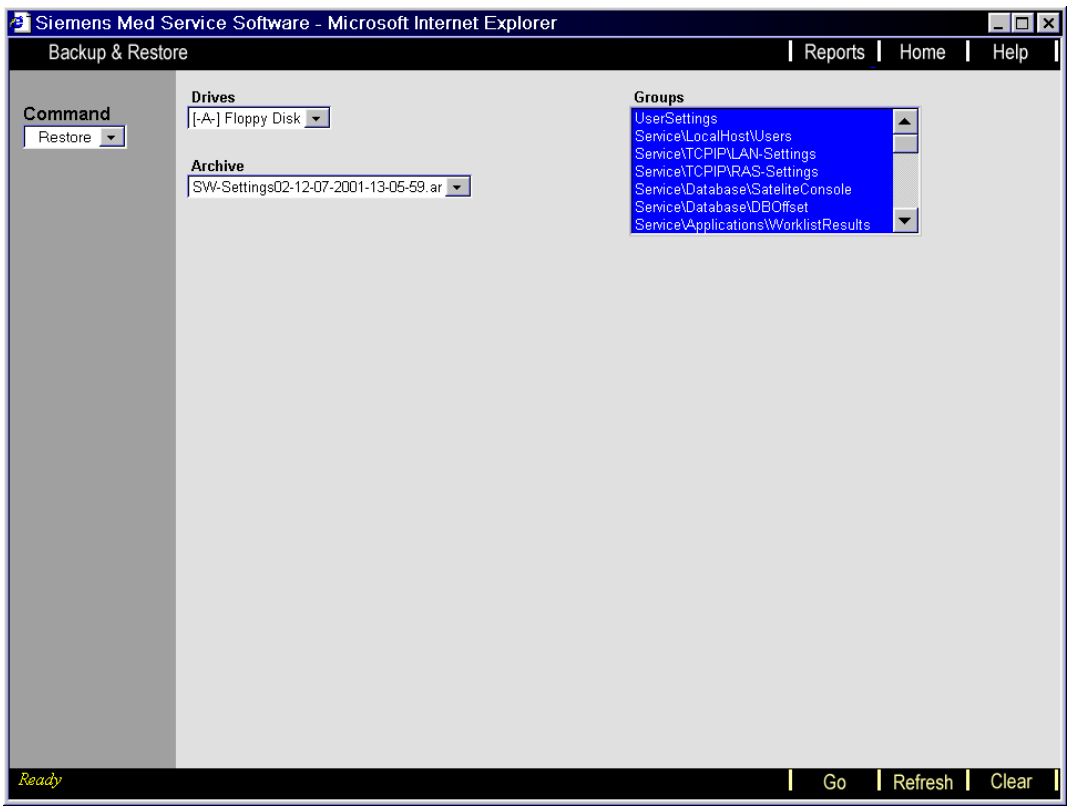
- Enter the service key (6 characters in 2nd mask).
- Confirm with **OK**.

The service home menu appears.



- Select **Backup & Restore**.
- Insert the backup floppy disk into drive A:.
- Select **Restore** in the **Command** selection menu.
- In **Drives**, select **[-A-] Floppy Disk**.

- Restore software settings.



- In **Archives**, select the correct (latest) software settings backup file.
- Mark all files in **Groups**, i.e. highlighted in blue (with Ctrl + left mouse button).
- The restore routine is started with **Go**.
- Wait until the ready message appears in the action bar. This takes a few minutes.
- Exit the window with **Home**.
- The acquisition workstation initiates a restart.
- Remove the backup floppy disk when the system has shut down from drive A:.

General remarks

NOTE	**Perform this chapter ONLY if required due to problems. Reinstallation can be necessary when the applications no longer function properly or when a version upgrade needs to be performed. Otherwise skip this chapter and continue with Chapter 10.**

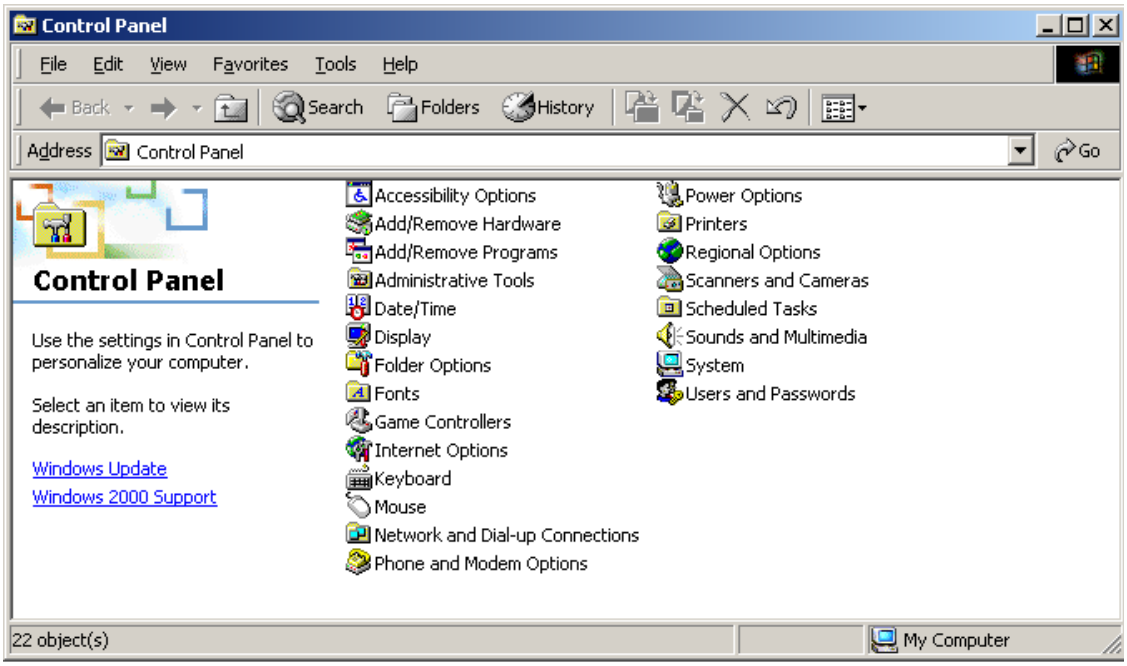
NOTE	**Unlike a new installation, a reinstallation is performed when the patient database has to be retained on the acquisition workstation. Several points need to be noted to reliably retain the link to the existing patient database following reinstallation. The instructions and warnings provided in the previous chapters apply accordingly.**

Requirements

- A 20-digit service key for the syngo® configuration must be available.
- A backup floppy disk for the software settings must be provided.

Reinstallation

- Restart the acquisition workstation.
- Log in as administrator.
- Press **Start**.
- Select **Run...**.
- Type “cmd” and press **OK**.
- Type “`stopcm`” and press Enter.
- Close the DOS window.
- Press **Start**.
- Select **Settings > Control Panel**.



- Select **Add/Remove Programs** in the Control Panel.
- Make sure that **ASCR x Uninstallation** is selected and press **Change/Remove**.
- Press **Next>**.
- Press **Uninstall>**.

Waiting time for uninstallation: approx. 5 min.

- Restart the acquisition workstation.
- Insert the ASCRx software CD-ROM in the CD-RW drive.
- Press **Start**.
- Select **Programs > Accessories > Windows Explorer**.
- Select **My Computer > R: ASCR <software version>**.

- Double-click **install.bat**.

NOTE	**Do not make any changes.**

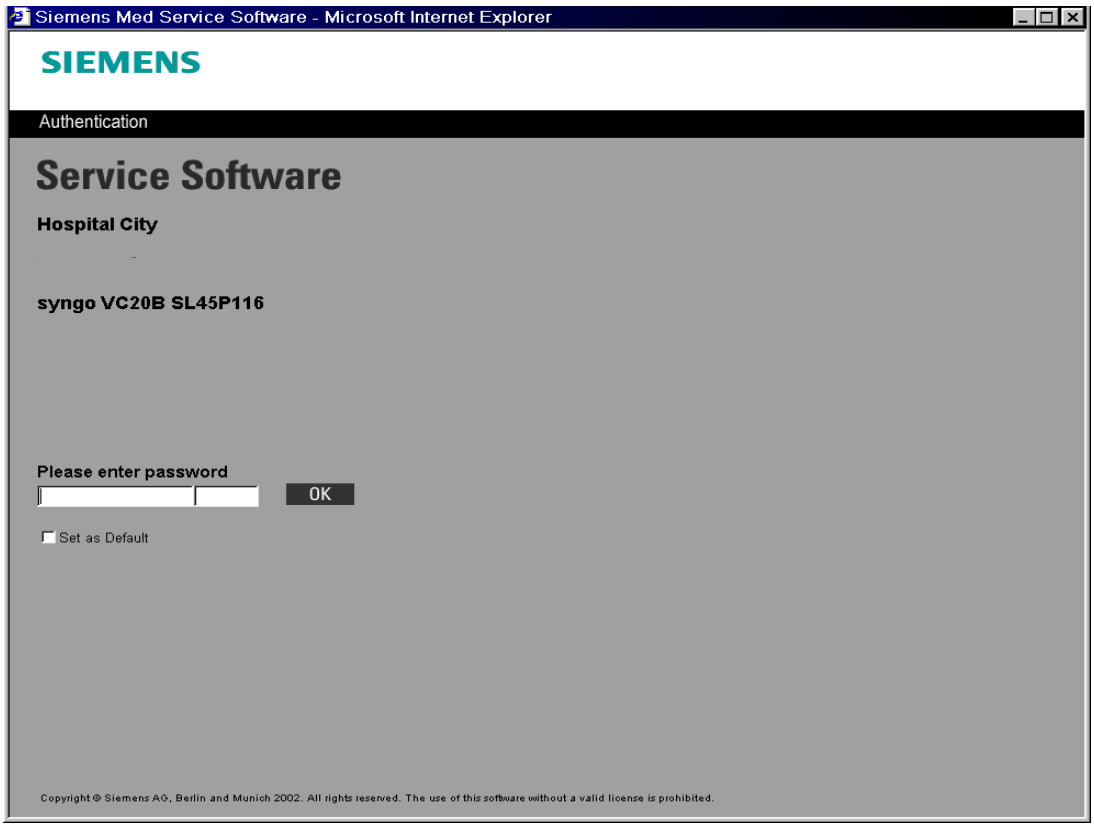
- Press **Next>**.
- Press **Next>**.
- Press **Finish**.

Waiting time: approx. 10 min.

- Press **OK** to restart the acquisition workstation.
- Remove the CD-ROM.
- Log in as administrator.
- Install the licence key (licence.dat) in:
  C:\ASCR\config\Licensing
- If the message “This folder already contains a file named ‘licence.dat’...” appears, confirm replacement with **Yes**.

Restore software settings

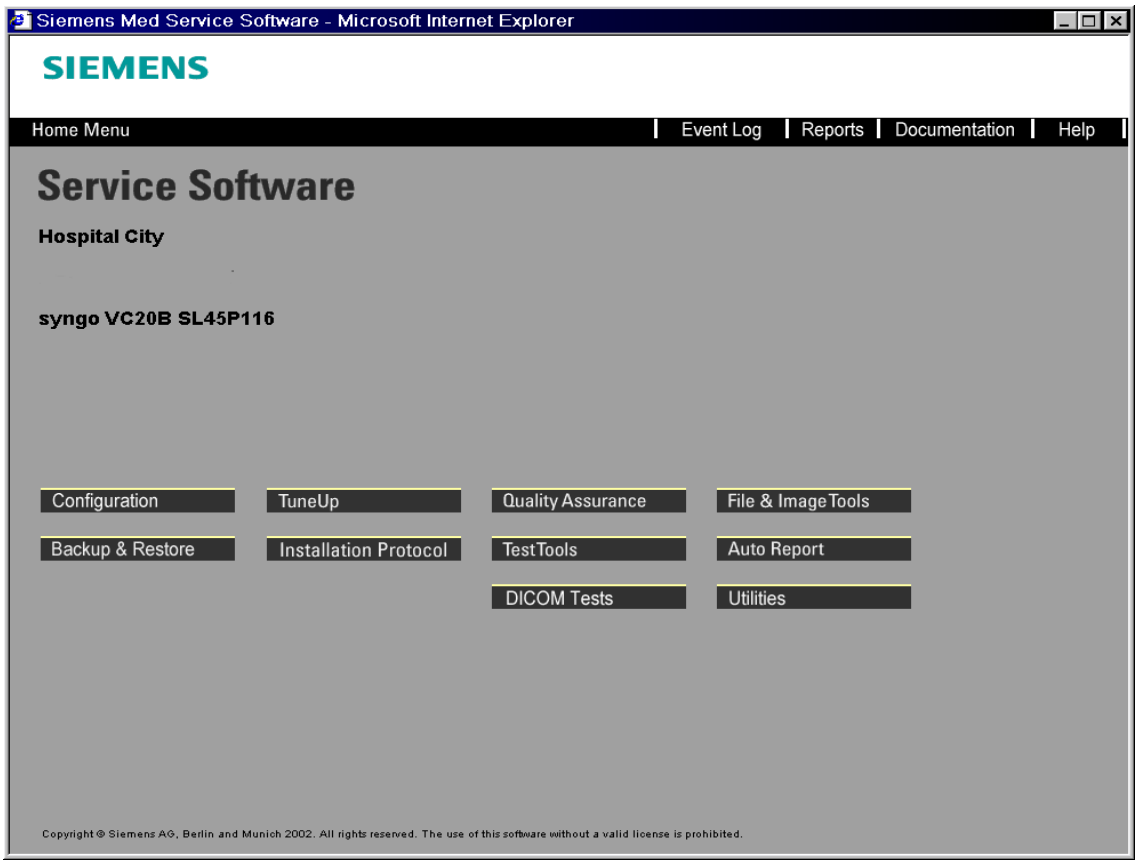
- Select **Options > Service > Local Service** in the window menu header.



- Enter the service key (6 characters in 2nd mask).
- Select **Set as Default**.

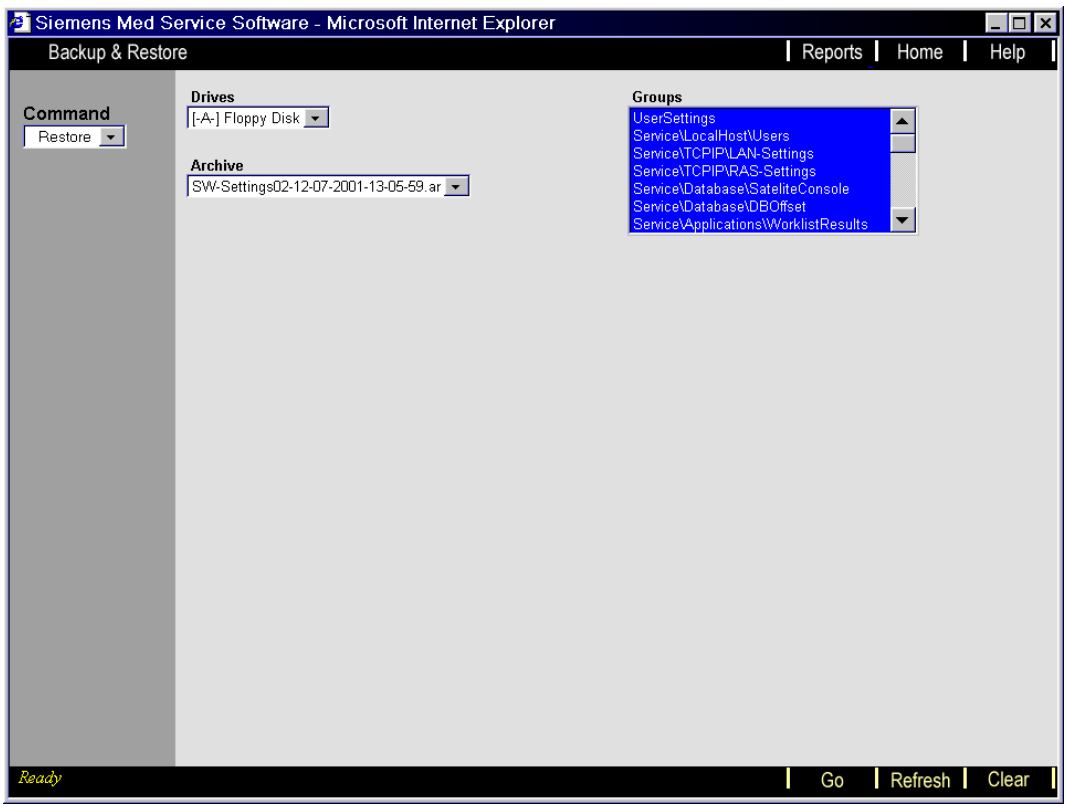
- Confirm with **OK**.

The service home menu appears.



- Select **Backup & Restore**.
- Insert the backup floppy disk into drive A:.
- Select **Restore** in the **Command** selection menu.
- In **Drives**, select **[-A-] Floppy Disk**.

- Restore software settings.



- In **Archives**, select the correct (latest) software settings backup file.
- Mark all files in **Groups**, i.e. highlighted in blue (with Ctrl + left mouse button).
- The restore routine is started with **Go**.
- Wait until the ready message appears in the action bar. This takes a few minutes.
- Remove the backup floppy disk from drive A:.

Final work steps

As a final step, perform a function check and image quality check as described in Start-up SPB7-420.815.01... .

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NOTICE

This page serves as a memo for registering the acquisition workstation to all connected modalities. Here, the most important information that is needed to assure image transfer at the DICOM level is summarized.

The table must be filled out and made available as a copy to the service personnel for the other modalities as information for the installation.

Acquisition workstation data	Parameter	Remarks
Host name	AWS	
IP address		
DICOM storage SCP and SCU		
DICOM print SCU		
AE title for storage		
AE title for print		
Port for storage	104	
Port for print	104	
Supported DICOM services: Image Transfer (Store) Query Retrieve	 yes yes yes	
Supported transfer syntax Implicit little endian Explicit little endian Explicit big endian	 yes yes yes	
Supported compression JPEG Lossy JPEG Lossless	 not recommended yes	
Syngo based system	yes	
Supported IODs	see DICOM Conformance Statement	

For more information, see the DICOM Conformance Statement.

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Page	Chapter	Change
3-2	Installation from the CD-ROM	Step about enable VGA mode for SIMOMED monitors is new.
3-3	Installation from the CD-ROM	Steps 3 and 7 are rewritten.
3-4	Installation from the CD-ROM	Step 7 is rewritten.
3-5	Installation from the CD-ROM	“Adapter tab” is replaced with “Adapter”.
3-8	BIOS settings	Steps 4 and 5 are rewritten.
5-2	Configuration	Image replaced in step 1.
5-3	Configuration	Image replaced in step 5.

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